

NEWARK INTERNATIONAL AIRPORT,
ADMINISTRATION BUILDING
(Newark International Airport,
Building 51)
North Area of Newark International
Airport, Brewster Road between
intersections of Brewster Road and
Route 1 and Brewster Road and
New Jersey Turnpike exchange 14
Newark vicinity
Essex County
New Jersey

HAER No. NJ-133-B

HAER
NJ
7-NEARK.V,
13-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD

NEWARK INTERNATIONAL AIRPORT,
ADMINISTRATION BUILDING
(Newark International Airport, Building 51)

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Location: North Area of Newark International Airport, Brewster Road between intersections of Brewster Road and Route 1 and Brewster Road and New Jersey Turnpike exchange 14, Newark vicinity, Essex County, New Jersey

UTM: 18.570400.4506340
Quad: Elizabeth, New Jersey, 1:24,000

Date of Construction: 1934 - 1935

Engineer: Unknown

Architect: Unknown

Present Owner: Port Authority of New York and New Jersey (PANY&NJ)

Present Use: Vacant

Significance: Part of Newark International Airport, the Administration Building was the second at Newark Airport. Opened in 1935, the second Airport Administration Building was one of the first advanced, second-generation airport terminal building types of its kind. With its convex, linear plan, it was a building prototype upon which subsequent airport terminals were based. A number of centralized passenger and service functions were located in the 1935 Airport Administration Building, including a weather bureau, air-traffic control tower, air-traffic control center, and hotel rooms. The control center was the first of its kind in the nation. The City of Newark, in conjunction with the federal New Deal CWA and WPA agencies built the building. At one time, it contained a series of ten WPA sponsored canvas murals painted by Arshile Gorky. During the 1930s and 1940s, the 1935 Airport Administration Building stood in the center of one of the world's busiest airports.

Project Information: The PANY&NJ is extending Runway 22R of Newark International Airport, whereas the Administration Building will be located in the Runway Protected Zone (RPZ) of the extended runway. The Federal Aviation Administration (FAA) prohibits occupied buildings in a RPZ. In addition, as part of the airport's capital improvements program, a new, larger administration building is required. The PANY&NJ is planning to relocate the Administration Building outside of the RPZ, to a new site approximately 2,500 feet to the southwest. The relocated 1935 Airport Administration Building will be combined with a building addition to create a new airport administrative building. The Airport Administration Building's exterior façade, and portions of interior, public spaces, will be restored, and will be called Building One.

This documentation intends to satisfy historic record requirements per an agreement between the FAA, the PANY&NJ, and the New Jersey State Historic Preservation Office. The documentation provides detailed information on the key historic periods in the evolution of the Administration Building and Newark Airport, from the pre-1935 period to 1952. A general history is provided for the 1953-2000 period.

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PRE-1935 NEWARK AIRPORT HISTORY

Under the leadership of Mayor Thomas Raymond, the City of Newark (Essex County) started construction of Newark Airport in late 1927. The airport site consisted of approximately 240 acres of undeveloped marshland, located on the east side of the City, approximately two miles from Newark's City Hall. The site was in the vicinity of major transportation modes in northeast New Jersey. The site was adjacent to New Jersey State Route 25. Further west, was located U.S. Route 1, a major national highway that connected the City of Newark to Philadelphia and New York. Directly to the east was an extension of Newark Bay, where the city's port was located. Nearby were numerous railroad lines, including the large yards of the Central Railroad of New Jersey. The original project included 68 acres developed for the airport's use. The total cost was \$1,750,000. Newark Airport opened on October 1, 1928.

A substantial effort was required to develop a safe and modern airport on the swamps of the New Jersey Meadowlands. To construct stable surfaces for airplanes and sound footings for buildings, expensive site work was required. An extensive site drainage system was built, with channels and dikes. Many thousands of cubic yards of sand and fill were placed to create a stable and level surface landing field. The efforts to raise the field above the water table were ongoing. By the end of 1930 the area of dry fill had expanded to 155 acres, by 1931 to 200 acres, by 1933 to 215 acres, and by 1935 to 218 acres. The City worked with local utility companies to bury underground power lines. No effort was spared in order to create a safe airport. The Port of Newark, located just south east of the field, installed floodlights to illuminate its water towers and smokestacks, in an effort to eliminate airborne hazards.

Mayor Raymond was encouraged to develop a municipal airport for a number of reasons, including public opinion, for at that time the city did not have an airport. Another important driving force that led the City of Newark to develop an airport were the economic gains to be achieved as the New York metropolitan area terminal for post office mail. The enactment of the Kelly Act by Congress in 1925 provided a major source of income for the early U.S. aviation industry; it authorized private carriers to fly the U.S. Mail. Newark was encouraged in its own airport development efforts by a report completed in 1927 by the U.S. Commerce Department. The report was the result of a federal commission set-up by the Secretary of Commerce, Herbert Hoover. Hoover had established the special commission to review potential New York area sites suitable for airport development. The report cited Newark as one of the best locations in the New York City area for such an undertaking. By 1929, the United States Mail had designated Newark as the New York metropolitan airmail terminus. From Newark airmail was rushed 11 miles away to the General Post Office Building, located on 33rd Street and Eighth Avenue in Manhattan.

The first lease for airport ground was signed in April 1928, with Colonial Airways (now American Airlines). The terms of Colonial's lease were for two acres of ground for ten years. From the onset, the policy announced by Newark's Chief Engineer James Costello was for individual lessees to construct their own hangars, under uniform standards established by the City of Newark. In October 1928 the New Jersey National Guard signed a 50 year lease for two acres, at one dollar per year.

By late 1928, Colonial was operating out of the new airport. Transcontinental and Western Airways Inc. (now TWA), National Air Transport (now United Airlines) and Pitcairn Aviation Inc. (the former Eastern Airlines) were also operating commercial services out of Newark by the autumn of 1930. Between 1929-1930, three of the four commercial carriers built individual hangar depots. These structures were located at the east end of the airfield. The three hangar depots were all approximately the same size, following the City's guidelines. Just to the north of the hangars was located a smaller two-story brick structure which functioned as the Airport's first Administration Building (c. 1931). The building housed the U.S. Mail, located on the first floor, as well as the second floor weather station. Located just south of the hangar depots was the 44th Aviation Division of the New Jersey National Guard. The Guard built a number of major structures between 1929 and 1931. These buildings included two large metal and glass hangars, located side-by-side. A smaller two-story brick headquarters was built to the north of the hangars.

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The City of Newark built a municipal hangar to the west, centered close to the north edge of the field. City Hangar, 128 feet wide by 128 feet long, was completed sometime in the fall of 1928. The fourth major carrier, Transcontinental and Western Airways operated out of this municipal-owned structure. Clustered with City Hangar were three additional, privately built hangars, built sometime during the year of 1929. Standard Oil of New Jersey, Eastern Aeronautical Corporation, and Newark Air Service Hangars each contained independent operations, where private planes were serviced and sheltered. All four hangar structures were built primarily of metal and glass. Directly to the south of City Hangar, stood the airport's first control tower (c. 1929), an open-platform placed on top of an oilrig derrick. The wood tower was approximately 25 feet high. This structure was one of the world's first, freestanding control towers.

The Ninth Precinct Newark Police House (c. 1930) was located just north of the City Hangar complex, on the other side of Route 25. It was a two-story brick structure which also contained fire fighting equipment. Just west of the Police House, located on the north side of Route 25, was the first Airport Restaurant of Newark. This brick structure opened for business in 1931.

The airfield was laid-out to the south and west of the City Hangar complex and Hangar Depots. As part of the original airport development, the world's first hard-paved runway was constructed. The asphalt impregnated cinder surface had a length of 1,600 feet. The airport's first international passengers arrived on October 17, 1928 on-board a Canadian Colonial Airways' Ford trimotor from Montreal. Celebrity flyers such as Charles and Anne Lindbergh, Richard Byrd, Clarence Chamberlin, Wiley Post, Amelia Earhart, and Frank Hawks, flew into Newark during this period on a regular basis. Newark Air Service and Eastern Aeronautical serviced their small planes. Air shows drew tens of thousands of spectators. Airport officials were compelled to erect crowd control fencing. Undeniably the new Newark Airport was a popular success, and was soon recognized as the New York metropolitan air center.

NEWARK AIRPORT AS A WORLD LEADER

The federal air mail contract and the commitment of the early air-carriers were possible because of the large, initial financial investments the City of Newark made in the original planning of the airport in 1927. With Newark's investment, the airport soon became an international leader. By 1930 it was one of the world's busiest commercial airport. In the following year at Newark Airport, 1931, 90,177 passengers were serviced, and 2,061,509 pounds of mail carried. In conjunction with Airways Bureau of the Department of Commerce, a U.S. National Weather Bureau station began operation in 1930 at Newark in the City Hangar. The station later occupied the second floor of the first Administration Building. In 1933 Jimmy Doolittle developed the first nighttime instrument landing system at Newark; an array of radio antennas, which facilitated "blind flying". This type of innovation enabled further growth in the commercial airline industry.

RIVALRY WITH NEW YORK CITY

Newark Airport had become an important symbol of community pride for the City of Newark. The City saw the airport as a means for keeping up with its larger metropolitan neighbor, New York City, located nine miles to the northeast. From Newark Airport's onset in 1928, it competed directly with New York for services, including passenger traffic and postal delivery. During this period the City of New York was building its first municipal airport, Floyd Bennett Field. Located in the far southeast corner of Brooklyn, Floyd Bennett opened in May 1931. However, it was not as popular with commercial carriers as Newark because of the greater distance from Manhattan. In December 1934 United States Postmaster General James Farley reconfirmed Newark Airport as the New York metropolitan postal airmail base.

The early success of Newark Airport convinced the State of New Jersey to build the Pulaski Skyway over the Passaic and Hackensack Rivers, directly connecting the airport to the recently opened Holland Tunnel. Airmail arriving in Newark was rushed to Manhattan's General Post Office, at 33rd Street. Newark had secured the continuation of the airmail service contracts in on-going battle with New York City.

1935-1941 NEWARK AIRPORT HISTORY

AIRPORT EXPANSION

By 1934, the number of passengers using Newark Airport had increased to 123,329 per year. The airport also continued to enjoy the popular acclaim typical of the new industry. Headline events, such as the setting of new aviation records, kept Newark frequently in the news. In 1934 Eddie Rickenbacker landed at Newark to set a new trans-continental passenger transport speed record from Los Angeles of 13 hours, two minutes. Later in the decade (1936) Howard Hughes established a new trans-continental speed record by flying his H-1 experimental plane non-stop from Burbank to Newark in seven hours, 28 minutes, and 25 seconds.

In 1934 Newark's new mayor, Meyer Ellenstein, started planning an ambitious airport expansion program with the goal of continuing Newark's domination of northeast commercial aviation. The expansion program required another major financial commitment by the City of Newark. The City secured Federal assistance, in part as a result of airmail routes. However, after a U.S. Senate investigation into alleged bid-rigging, President Roosevelt canceled all private carrier airmail contracts in February 1934, and ordered the U.S. Army to fly the mail. The Army determined during its use of Newark Airport (until May 1934 when contracts were again awarded to private carriers) that the facility was inadequate. For example, Army pilots were sleeping on hangar floors. Thus, federal attention was directed towards improving the airport, including the provision of a central administration building.

The planned expansion at Newark was augmented by early New Deal programs, including the Civilian Works Administration (CWA). The program included a new hangar construction, a new administration building with sleeping quarters, as well as runway expansion. Site characteristics, required additional drainage of swampland. Dry fill contract work in 1935 increased the usable area to 285 acres. The planned new hangars anticipated the space requirements of the new generation of larger, commercial passenger airplanes, which were coming into service.

1935 AIRPORT ADMINISTRATION BUILDING

Centralization of passenger services was one of a number of objectives of the expansion program. Up to 1935, each major carrier operated from its own hangar depot at Newark Airport. Previously, when a transfer was made between airlines, passengers walked across the cinder and mud field, to the next plane. The provision of a paved apron in front of a central passenger building would create a more suitable walk surface, especially during inclement weather. A centralized facility would also provide additional passenger safety, as less walking would take place on the airfield among operating airplanes.

The new Airport Administration Building as planned in 1934, had a budget of \$600,000. The City of Newark designed the building in conjunction with the CWA. Attribution of the design architect or the engineer of record remains unclear. No records are known to exist in the City of Newark. CWA records are incomplete, as at this time (1934-1935) the federal agency was in its formative stages and soon to be taken over by the Works Progress Administration (WPA). One of the few existing CWA drawings (dated April 14, 1934) for the Airport Administration Building project lists the following initials in the title block:

*designed by: J.A.F.
drawn by: J.A.F.*

When completed in early 1935, at the cost of \$700,000, the two-story Airport Administration Building totaled 34,000 square feet.

The new structure's location was less than 50 feet behind City Hangar, immediately to the north. The location was close enough to City Hangar to prevent airside access to the new building on its west side. An

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asphalt-paved apron was laid along the air side of the new building. In addition to City Hangar, the late 1920s metal and glass hangar structures of Standard Oil, Eastern Aeronautical, and Newark Air Service were also still in place and used at this time. A small brick Electric Sub-Station was built at the same time, just to the northwest of the Airport Administration Building.

The exterior treatment of the 1935 Airport Administration Building was exposed, reinforced concrete. The choice of cast-in-place concrete as the exterior finish was distinctive at Newark, and called special attention to the new central airport structure: all other Newark Airport buildings of the same period were either brick, or metal and glass. The Administration Building's facade was divided into alternating continuous horizontal bands of concrete spandrels and windows. Within the line of the continuous horizontal window bands, dark red-brown brick was used to create a pattern of solid and transparent surfaces. Steel casement windows and doors were used throughout. A glass and metal control tower, semi-circular in plan was centered on the roof, located above the main airside entry. The tower utilized radio equipment. Metal canopies, finished in black porcelain, were located above each of the waiting room entries. Cast aluminum ornament was used to accentuate the main land side and airside entries.

The plan of the Airport Administration Building is described in the following *Newark Evening News* article that ran on, May 14, 1935; "The building ... has an average width of 50 feet, its front extends 200 feet, and its two wings of 100 feet length each slope out at 45-degree angles. This will enable eight transport planes to taxi to it at one time." The article further describes "The Main Concourse on the first floor..." where "...There are a central waiting room and six smaller waiting rooms for use of commercial companies". The Main Concourse, which almost extended along the full length of the building's first floor, via an eight-foot wide Public Corridor, was adjacent to the airside of the airport. The concourse permitted passengers to safely view parked aircraft. With marble wall cladding, inlaid terrazzo flooring, and decorative ceiling plasterwork, aeronautical themes were typically found within all finish materials of the Main Concourse. Inlaid in the first floor terrazzo, centered in the Main Concourse, is an eagle medallion of the CWA. Offices, toilet rooms, mechanical rooms and fire stairs were located on the land side of the first floor.

Primary access to the second floor was via a pair of open stairs, located on either side of the land side main entry. The stairs were black painted concrete, with polished aluminum railings. In the center portion of the second floor was an open space located at the top of the stairs. The 1934 historic plans of the Administration Building labeled this space "Lounge". On either side of the lounge were exterior roof terraces. Additional office space was located in the second floor of the west wing, used in part by the U.S. National Weather Bureau. In the second floor of the east wing were a group of hotel rooms. These 14 rooms consisted of single and double rooms, all with private bathrooms and showers. Office and hotel rooms were organized along a double-loaded corridor. All second floor rooms had plaster walls and ceilings, and were devoid of special ornamental treatment. Floor finishes were painted concrete.

OPENING DAY MAY 15, 1935

During a two-day series of events beginning on May 14th, which included a huge air-show the first day, the new Airport Administration Building officially opened on May 15, 1935. Included in the festivities were fireworks and a visit by the aviatrix Amelia Earhart. Earhart dedicated a new seaplane the second day. The new building's roof terraces and surrounding parking areas were filled with people. The Newark Star Eagle reported in its May 16, 1935 edition that a crowd of over 50,000 attended the ceremonies, and that "Hundreds of telegrams, congratulating Newark on its fight against the moving of the airmail base to New York were received during the day."

PUBLIC ART IN THE AIRPORT ADMINISTRATION BUILDING

Built during the height of the Great Depression, a number of federal programs of President Franklin Roosevelt's New Deal played important roles during Newark Airport expansion. The CWA, headed by

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Harry Hopkins, completed the Airport Administration Building for the City of Newark in May of 1935. The WPA sponsored a number of separate national art programs between 1933 and 1943, under the auspices of the Federal Art Project. In a letter dated December 10, 1935, the regional director of the WPA, Audrey McMahon, was asked to obtain artwork for the new Airport Administration Building at Newark, which had been completed during the previous spring. By February 1936, the WPA art project at Newark Airport was underway.

ARSHILE GORKY

Before painting the Newark murals, the Armenian-born American painter Arshile Gorky (1905-1948) had obtained WPA funding in December 1933 to complete a series of mural studies intended for use at Floyd Bennett Field. The studies were based on a series of Wyatt Davis photographs of airports and airplanes. The New York City Art Commission did not consider the submitted studies suitable for use at Floyd Bennet. Sometime after December 1935, the WPA reassigned the studies for use at Newark Airport.

Gorky then started a series of ten large canvas murals in his Greenwich Village studio for Newark Airport's new Administration Building. The mural cycle was titled "Aviation: Evolution of Forms under Aerodynamic Limitations". The murals varied in size; "Mechanics of Flying" was nine feet by eleven feet, "Aerial Map" was six feet five inches by ten feet one inch, etc. Gorky's work had progressed far enough that in September 1936 it was part of the Museum of Modern Art's landmark exhibit "New Horizons in American Art". The Gorky Newark Airport mural portion of the exhibit included a small model of the proposed second floor installation, as well as one of the completed, final paintings. A second version of "New Horizons in American Art" was shown in November 1936 at the Newark Museum.

The *Newark Star Ledger* reported that the completed mural cycle was installed in the Airport Administration Building's second floor, in the Lounge by June 10, 1937. The public reaction was mixed, with the *Star Ledger* reporting that "Visitors to the new Administration Building at Newark Airport were walking around in a daze yesterday trying to decipher a series of startling murals." Critically, as described by Jim M. Jordan, the mural cycle at Newark represented "...a unique place among his works...the geometric and biomorphic references...help us to place and appraise the Newark murals within the larger history of Modern Art." Since Arshile Gorky's death in 1948, major retrospectives of his work have been held at the Whitney Museum of American Art in New York City, the Museum of Modern Art in New York City, and the Tate Gallery in London.

BREWSTER HANGAR

Eventually larger hangar spaces were required at Newark Airport. When the airport opened in 1928, typical planes were the Fokker and Ford tri-motors, seating ten people. Early 1930s planes included the Boeing 247, seating ten people, and with a 74 foot wingspan. By the mid-1930s larger planes, such as the all-metal 21 seat Douglas DC-3, with a 95 foot wingspan, were in use. The City of Newark designed and built a new large hangar facility as part of the 1930s expansion program.

Brewster Hangar is located approximately 1,200 feet to the west of the 1935 Airport Administration Building. The hangar's location, close to the west end of the airport's northern border, is important. The construction of the Brewster Hangar took place on one of the last large plots of undeveloped land on the north edge of the airport. Future large-scale airport growth and development would take place to the south, beyond the original airport complex.

Brewster Hangar is 1,054 feet long, 150 feet wide and 57 feet high. Its size and scale dwarfed all the previous airport buildings, including the 1935 Airport Administration Building. The hangar is divided into three sections, with two doors in each section. The hangar portions of the structure are metal and glass. Each hangar section is separated from the adjacent section by brick office structures. At the time of its opening in 1939, it was reported that the new hangar could house 12 DC-3s for repair in each of its sections.

TWA PASSENGER TERMINAL

The success of Newark Airport appeared to be complete, at least until the decade's end. Until 1939, Newark was one of the busiest airports in the world. During 1938 Newark Airport handled 355,123 commercial airline passengers (one-quarter of the world total). However, there were underlying currents of concern, primarily regarding lease negotiations. The original leases were for a ten-year period. As the leases expired in 1938, the City opted to renegotiate with the intent to recover a part of their large financial investment. The City prepared lease diagrams in 1938 to assist in the negotiations. The title block of these leasing drawings reads as follows:

drawn by: J. H. Edwards
checked by: Roland Thompson
ass't superintendent: Archie Armstrong
chief engineer: James Costello

Newark and the "Big Four" major airlines TWA, United, American and Eastern; battled over this issue. By the end of the decade leases were on a month to month basis.

This lack of cooperation lead the New Jersey State legislature to take action to ensure that the airlines and the City of Newark would coordinate air-traffic. The four major airlines were forced by the state to form a corporation, establishing the first air traffic control center. The center opened on December 1, 1935. The center was located on the 1935 Airport Administration Building's second floor, below the control tower. The Newark center eventually assumed enough significance that it became used for national air-traffic control training.

Perhaps in conjunction with lease negotiations, TWA chose to build its own passenger terminal. In 1937 TWA announced in the *Newark Evening News* that it was opening its own passenger station at the airport, built just to the northeast of the new Airport Administration Building. Located less than 150 feet away, the small, one-story stucco and wood structure was configured in the plan of the company's logo, a circle with a pierced bar. The lobby was placed within the 36 foot diameter drum. The TWA Passenger Terminal was the last significant pre-World War II structure built at Newark Airport.

Significantly, TWA had never moved into the 1935 Airport Administration Building. Furthermore, A. H. Armstrong's *"Newark Airport History"* (1955) notes that none of the "Big Four" used the new building until 1941. Recollections of the original air-traffic control operators, who worked on the second floor of the Airport Administration Building, also point to the same conclusion: namely that the Airport Administration Building was not used by the airlines until 1941. They described working in an almost empty building.

PRE-WAR YEARS

In 1937, New York City purchased the privately owned Curtis Airport at nearby North Beach. This location became the site for a new airport, built at the cost of \$40,000,000. New York City's mayor Fiorello La Guardia fulfilled a long time dream when the New York City municipal airport at North Beach, La Guardia Airport, opened in December 1939. When La Guardia took office in 1934, the commercial airlines were fully entrenched at Newark. Floyd Bennett Field, at the far southeast corner of Brooklyn, was too remote to provide strong competition for Newark. However, with 90% of passengers and 50% of air-mail flown out of Newark originating in New York, there was tremendous pressure on Newark to maintain its advantage.

By May 1940, the "Big Four" Newark airline companies moved all operations to La Guardia, to avoid lease disputes. In addition, the airlines cited on-going poor management at Newark Airport as an important reason for their abandonment of Newark. At that time Mayor Ellenstein temporarily closed Newark

Airport for reorganization. As part of the reorganization, City Hangar was demolished. With the demolition of City Hangar, full airside access to the Airport Administration Building became possible. In late 1940 the appointment of Edwin Aldrin, Sr. as Newark Airport's new general manager provided strong, central leadership. By June of 1941, Aldrin reopened Newark Airport and the "Big Four" returned. Only at this time was the Airport Administration Building finally used as an air passenger terminal building. With the advent of World War II, this operation lasted for less than one year.

1942-1952 NEWARK AIRPORT HISTORY

WORLD WAR II

In the early spring of 1942, the War Department assumed control of Newark Airport for exclusive military use. Located next to Port Newark, the airport had special, strategic significance. Thousands of small fighter planes, including P-38s, P-40s and P-51s, were flown from manufacturing plants to the airport. Once at Newark the planes were partially disassembled, and shipped overseas on transport ships. As one of the important Air Transport Command Stations during the war, Newark Airport averaged 40 flights and 150,000 pounds of air cargo daily. In all, over 51,000 aircraft were shipped from Newark overseas during World War II, primarily for the European theater of operations.

The Army extensively upgraded Newark Airport during its use, including improvements to the field. Three 4,000 foot long runways were built in 1942. In 1943 the Army extended the three runways as follows:

North/South Runway (numbers 1 and 19) total paved length 5,950 feet

East/West Runway (numbers 10 and 28) total paved length 7,100 feet

Northeast/Southwest Runway (numbers 6 and 24) total paved length 7,900 feet

Other field improvements included the placement of a concrete apron next to the south side of the Administration Building, as well as a new 65 foot high Control Tower located at the east side of the airfield. An advanced lighting system was installed, both on runways and approaches. During this time the first radar installation was introduced to Newark Airport.

The Army constructed many new buildings starting in 1942. The large number of buildings required a numbering system to be used. Atlantic Overseas Air Technical Services Command prepared a site plan dated August 1, 1942 (revised June 30, 1945). The Airport Administration Building is labeled Building One on this drawing. Some of the new structures included the Butler Hangar (Building 12); located west of the Brewster Hangar, and the Cargo Building (Building 50), located south of the New Jersey National Guard. A series of huge barracks complexes were built, including one on the north side of Route 25, and a second west of Brewster Hangar. Three warehouse structures were also erected, just east of the American Airlines Hangar Depot. These Army hangars, barracks and warehouse have all since been demolished.

As part of Army airfield improvements, the 1920s Standard Oil, Eastern Aeronautical, and Newark Air Service Hangars were relocated. Hangar relocation allowed for the center of the airfield to be cleared. The Eastern Aeronautical and Newark Air Service Hangars were moved to the east side of the airport. The two hangar buildings were combined, and substantially altered. The combined hangars are called Building 11, and have been clad in corrugated metal siding. Building 11 is currently used as an airport maintenance garage. The Standard Oil Hangar was moved to the west. By 1942 the stuccoed TWA Passenger Terminal was also demolished.

During the period of Army occupation of the Airport Administration Building the Gorky murals, located

on the second floor, disappeared. The murals were "lost" until two were discovered in-situ in 1972. The disposition of the other eight murals is still unknown, and perhaps destroyed. The two surviving murals, "Mechanics of Flying" and "Aerial Map" were restored and now hang, on loan from the Port Authority of New York and New Jersey, in The Newark Museum.

1946

In 1946, the City of Newark reassumed control of the airport. Archie Armstrong, a former City of Newark engineer who worked at the airport during the 1930s, became the new airport manager. At the time of the reopening on February 4th, eight airlines operated 78 daily flights. By the end of 1946, 571,000 passengers used the airport.

Finally the 1935 Airport Administration Building functioned as it was originally designed. The major airlines occupied the building, using it as a passenger terminal. Historic photos and drawings indicate that the Main Concourse space extended fully to each of the two side wings. Overhead canopies, installed inside the Main Concourse, hung from the plaster ceiling. These canopies defined ticketing and baggage areas for the individual airlines.

With the Army's relocations of the old 1920s hangar structures, the air side was cleared, allowing free access to the building. The Administration Building now stood in the center of the airfield, with a clear view. To the west, the 1938 Brewster Hangar was used for aircraft maintenance. The 1920s Hangar Depots, located at the east end of the airport were still in place (they were demolished in the early 1960s). The hangar complexes neatly framed either side of the Administration Building.

The Army's runway improvements also greatly contributed to the better functioning of air movements at the airport. A more formal, unidirectional runway system was constructed. The three reconfigured and lengthened runways radiated outward from the Administration Building. Control tower functions now took place at the new Army built tower, a metal structure located at the southeast side of the airport. In 1962, the current 165 foot high Control Tower replaced the Army Control Tower. The Army Tower was then dismantled and relocated to La Guardia to serve that airport until its new tower was completed.

PORT AUTHORITY

Later in 1946 the City of Newark requested the Port of New York Authority (PA) assume control of Newark Airport. After a long period of negotiations with the City of Newark, the PA signed a 50 year lease in 1947 under which it assumed operation of Newark Airport. On March 31, 1948, PA management of the airport commenced. Later in 1948 the PA submitted a master plan for Newark Airport expansion, including the provision of a dual-parallel runway system and new hangars. The process began by acquiring an additional 880 acres, including adjacent acreage located to the south in the City of Elizabeth (Union County). Airport expansion was estimated to cost \$50 million and scheduled to take seven years to complete.

AIRPORT ADMINISTRATION BUILDING EXPANSION STUDIES

As part of the PA's master plan for Newark Airport, studies for the expansion of the existing 1935 Administration Building were done in an effort to accommodate the anticipated increase in post-war air-traffic passengers. In the September 9, 1949 edition of the *Newark Evening News*, it was reported that the PA announced plans to expand the Administration Building by two-thirds, at a cost of \$1,000,000, even though the expanded "...structure is expected to serve only five more years".

The *Evening News* then reported on September 14, 1950 that the PA rejected the plan to expand the existing 1935 Administration Building, because "...it was shown to be economically unfeasible". The PA announced on the next day, September 15, that it would build a new passenger terminal building, located

immediately to the west of the 1935 Airport Administration Building. The Administration Building's role as the airport's air-passenger terminal was about to come to an end.

1953-2000 NEWARK AIRPORT GENERAL HISTORY

On July 29, 1953, the new air passenger terminal opened. In less than a 20 year period, the 1935 Airport Administration Building, planned in the early 1930s, when traffic at Newark numbered approximately 100,000 air passengers per year, was obsolete. Later known as "North Terminal", the new terminal handled 1,471,030 passengers in the first full year of its operations in 1954. Within a decade, the "North Terminal" also became obsolete, as the PA began the planning and construction of three new terminal building complexes located to the south. In 1997 the "North Terminal" was demolished.

In 1955, the PA altered the Airport Administration Building. The structure became a post office, as well as a flight kitchen for United Airlines. Loading docks with corrugated aluminum canopies and enclosures were added to the building's exterior. The interior first floor was subdivided with partitions. These included a concrete masonry wall that prevented direct access from the building's front entry at the land side, to the main doors at the air side. A large freight scale was installed in the Main Concourse. One of the two main stairs was altered. An original occupant, the U.S. National Weather Bureau, remained on the second floor. The Bureau is scheduled to move from the building in the autumn of 2000. Original steel casement windows were replaced with double-hung aluminum units in the 1970s. All of the non-original interior partitions and exterior loading dock structures have been recently removed in preparation for the relocation of Airport Administration Building, scheduled to take place in the Fall of 2000.

Airport expansion during the decades of the 1950s and 1960s took place to the south of the Airport Administration Building, into Elizabeth (Union County). Buildings from the 1920s and 1930s, such as the Fire House and the Hangar Depots, were razed. In 2000, the only surviving structures of the late 1930 period are the following:

Post Office (Altered and now known as Building 5. Currently used as sleeping quarters for snow removal crews.)

Brewster Hangar (Substantially altered and scheduled for demolition.)

Building 11 (These two former hangar buildings were relocated and combined by the Army. They are now substantially altered.)

Electric Sub-Station (Intact)

Army built structures erected between 1942-1945 have also been demolished, including the Butler Hangar (Building 12), and the Cargo Building (Building 50).

Most large-scale airport growth and development was away from the Airport Administration Building, to the south. The structure, renumbered Building 51, was almost forgotten in the "North Cargo Area". Perhaps the Airport Administration Building survived during the 1950s and 1960s was its remote location, at the far north edge of the airport, away from the new center of large-scale development. The Airport Administration Building eventually became surrounded by the public, long-term Parking Lot G.

In the late 1970s the Airport Administration Building's historic significance became acknowledged at the national level. The Airport Administration Building, along with the Brewster Hangar and the Medical Building, was accepted on the National Registry of Historic Places, ensuring its survival in the future (permission has been granted to demolish the Brewster Hangar). The 1979 National Registry Nominating Form states that the surviving structures "... possess national significance in their relationship to the his-

toric development of air transportation...", including "...the development of major engineering and communication technology, and the fact that the WPA Project was used to construct the Administration Building."

The list of Newark Airport's aviation technical and commercial highlights include:

- World's first hard surfaced runway (1928)
- One of the world's first freestanding control towers (c. 1929)
- First all-air Ford Tri-motor commercial service to the West Coast (1930)
- Nation's first night-time instrument landing system (1933)
- Nation's first air traffic control center (1936)
- First non-stop DC-3 commercial service to Chicago-American Airlines (1936)
- One of the world's busiest commercial airports (1930-1939)

EARLY AIRPORT DEVELOPMENT AND PLANNING-COMPARATIVE HISTORY

To understand the 1935 Airport Administration Building's architectural significance, it must be placed in an historic context. The history of early development and planning at Newark Airport closely followed that of other airports in the nation. This pattern of development did not vary significantly, with possibly one important exception, attributable to Newark's commercial importance as the New York City Airport. An historic comparison of airport development and planning between Europe and North America is also of interest, and contributes to the understanding of the significance of Newark Airport's design.

UNITED STATES DEVELOPMENT AND PLANNING

After World War I, slow growth occurred in the American airline industry but accelerated by the end of the 1920s. From that time onward industry growth was rapid and continued unabated for decades. After the war, many American military fliers moved into positions of early civilian leadership. In the early 1920s America's most famous World War I flying ace, Captain Eddie Rickenbacker, formed Florida Airways, to transport mail. Harold Pitcairn purchased his company, which soon became known as Eastern Airlines. Rickenbacker eventually became Eastern's president. At Newark Richard Aldworth became one of airport's first general managers. Aldworth flew with Commander Billy Mitchell's WW I flying squadron in France. Growth in the commercial aviation industry surged after Lindbergh's successful trans-Atlantic flight in 1927, and his subsequent 48 state tour. The public became enamored with flying. Newspapers across the country set-up bureau offices at airfields, reporting on the daily events.

During the 1920s individual businessmen, fliers, entrepreneurs, etc. quickly established the many different, independent components of the new U.S. airline industry. Notably, almost all of these were established without major federal government subsidization, support, or regulation. Some City governments built airfields, as was the case in Newark. But, independent companies also established, numerous, small private airports. An example is the Burbank, California Airport (1930) developed by the Austin Company, of Cleveland, Ohio. The Curtis-Wright Company built a series of private airports, criss-crossing the U.S. The very first airport located at La Guardia Airport (originally called North Beach) was a Curtis-Wright Company facility (1929). Many individual airlines, privately financed, were also set-up. By the fall of 1930 the "Big Four" major airlines, TWA, United, American and Eastern were operating independently at Newark Airport.

HANGAR DEPOT BUILDING TYPE

Three of the four major Newark Airport airlines owned their hangar depots. The hangar depot was a first-generation airport building type. The typology consisted of a large free-span hangar building, usually clad in metal and glass. Attached to the hangar were small additions, often built using more traditional masonry material, and neo-classical forms. These appendages housed administrative spaces, small passenger waiting rooms, ticketing offices, etc. Independent airlines of the period had very little in common. Each was eager to make a profit, as they competed against each other for passengers, and more importantly, air-mail contracts. At Newark Airport, a small, freestanding control tower, open to the air, allowed city workers to direct airplane traffic of the carriers. The four Newark airlines shared only the runway and taxi surfaces, and the air above.

EARLY NEWARK AIRPORT PLANNING

The pre-1935 site plan indicates how little control there was at Newark Airport. The plan was organic, seemingly random at first glance. This held true for all buildings except for the three hangar depots of Eastern, United, and American, located at the east end of the field. Two of the three hangar depots aligned on a north/south axis. A second group of Newark's buildings was located in the airport's center, arranged in a cluster, almost like the informality of a farm. Indeed, the forces determining an airport's development were not unified, and included major environmental forces, such as prevailing winds. Early airplanes had such insufficient engine power that take-offs often had to head directly into the wind, to ensure adequate lift. Omni-directional fields were the common practice. Buildings were placed relative to airplane air approaches.

An additional dynamic was at work at Newark that did not effect any other U.S. airport. Newark Airport functioned as the primary New York City metropolitan area airport until 1939. Because of this, many diverse and competing activities were taking place, making it difficult to develop a comprehensive long-range formal plan. As New York City's major air terminal, all the important U.S. domestic carriers were competing for business at Newark. In addition, the federal government had a major voice at Newark, as the airport served as the New York City airmail terminal. The problem of management of these competing interests was difficult at best, and made Newark unique. Newark Airport management also grappled with the inability to predict future industry expansion (a common worldwide industry problem of the era). This problem was especially acute at Newark, which by the beginning of the 1930s was one of the world's busiest commercial airports. Thus, rapid growth, combined with the various competing interests, made it difficult for the City of Newark to determine how this relatively new building type and facility should be planned and managed. Both short and long-term development and planning were effected.

An example of the difficulty the City of Newark had managing the airport at that time was its relationship with a major tenant TWA, who leased space in its municipal hangar. TWA occupied City Hangar, built in the late 1920s. The 1935 Airport Administration Building was located just behind City Hangar, preventing air side access to the west half of the new building. There are indications that only the east half of the new building was initially used as a passenger terminal. Only late in 1940, when the City Hangar was razed, did airplanes gain complete access to the new building's apron. Apparently TWA was waiting to move into its own new passenger terminal building at the airport, designed in late 1937.

The new TWA passenger terminal, located just to the northeast of the Airport Administration Building, opened in 1938. The airline's financial commitment to the Newark Airport site, the new building, was a mere \$15,000. The inexpensive structure was clad in stucco. This action by TWA raises several questions: Why didn't TWA move into the brand-new, state-of-the-art Administration Building (built for \$700,000), a building that was not fully occupied? Was the modest, new terminal built by TWA simply used as leverage in its negotiations with the City? Additional research into this aspect of the early development of Newark Airport would be of great interest, contributing to the understanding of the 1935 Airport Administration Building.

The lease negotiations between Newark's Mayor Ellenstein and the airlines were contentious, and played-out as a public affair. There was continuous local newspaper coverage in the late 1930s of the negotiations. These management/tenant problems eventually contributed to the temporary closing of Newark Airport in early 1940, by which time the "Big Four" domestic airlines had relocated to the new La Guardia Airport located at North Beach. At this time, TWA abandoned its just completed stucco terminal building.

LEHIGH PORTLAND CEMENT AIRPORT DESIGN COMPETITION

During the late 1920s the problems of unplanned growth and development of American airports became apparent to professional designers, planners, and leaders of American business, including the fledgling airline industry. In 1929 the Lehigh Portland Cement Company, of Allentown, Pennsylvania sponsored an international airports design competition. A total of 257 designs were submitted. The subsequently published book of 1930 presented the 44 prize-winning designs. The book was influential in future American airport planning and design. Airport designs of the competition, such as the first-prize scheme of the Los Angeles architects Zimmerman and Harrison, used concrete to develop new building types, placed in more formal planning arrangements.

In conjunction with the 1925 Philadelphia Sesqui-Centennial Exposition, entrepreneur Thomas Mitten established a Washington D.C. airfield, Hoover Field, on the banks of the Potomac. It served as a layover point for visitors flying north in the ten-seat Fokker F-VII tri-motor airplanes to Philadelphia. Later, the airport expanded, and new buildings were constructed. The 1930 design of the terminal building at the enlarged Hoover Field (later renamed Washington Airport) is noteworthy. The architects Holden, Scott and Hutchinson provided outdoor viewing terraces, and a central passenger waiting room. The modest structure's construction was of exposed concrete. The two-story structure, with a central, oval-shaped roof control tower, has since been demolished. Many of these terminal features were integrated into the design of the 1935 Airport Administration Building.

In 1931 the City of Chicago built a new airport passenger terminal building (now demolished), at the Chicago Municipal Airport (later renamed Midway Airport). The main passenger terminal was built in exposed concrete, with continuous horizontal-banded windows of aluminum. Linear in form, it had the overall dimensions of 72 feet by 162 feet. The new terminal building had a two-story central block that contained a waiting hall. Two smaller one-storied wings were located on each side of the central block. Centered on top of the central block was a glass-enclosed control tower. Very quickly the "International Style" concrete structure became inadequate. Over 100,000 passengers were served in 1932. By the end of the decade, Chicago was planning to replace the 1931 structure with a larger facility, to handle the increased passenger loads handled by the new generation of airplanes, such as the 14 passenger DC-2, and the 21 passenger DC-3.

The terminal building at Midway is representative of many other early 1930s airport terminal buildings in the United States, including Fairfax Airport (1929), located outside of Kansas City. The buildings at Fairfax were developed in conjunction with an overall plan designed by the landscape architect Ernest Hemminghaus. The large facility impressed Charles Lindbergh; as a TWA executive he advocated the selection of Kansas City for the company corporate headquarters. The only major difference among these new terminal complexes was size, and regional styling. The airport terminal building at Birmingham, Alabama (1931) was Mount Vernon Revival. The Albuquerque Terminal Building (designed in 1936) was Pueblo Revival, clad in adobe block.

NEWARK AIRPORT ADMINISTRATION BUILDING DESIGN

The choice made by the designers of the 1935 Newark Airport Administration Building structure to create a more contemporary look, using reinforced concrete as the primary exterior material, was probably influenced by the Lehigh Portland Cement design competition. Certainly the competition was a well-known event within the architectural design profession. The use of exposed architectural concrete at Newark, as

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a finished exterior material, was a "modern" design solution similar to many of the competition entries. Large "modern" metropolitan airport terminal buildings, such as at Chicago, must have been known to the designers at Newark, and influenced their work; the exterior appearance and layout of the Administration Building at Newark is similar in style and form to Chicago's 1931 "International Style" terminal.

The contrast of decorative treatment of the 1935 Airport Administration Building's exterior to the interior is striking. The concrete exterior is devoid of any decoration, except for the small amount of ornamental metal work at the entries. The Art-Deco interior, with its neo-classical columns and capitals, highly decorative plasterwork, and marble walls, is similar to the great U. S. train terminals, built in the previous 30 years. Ironically these building types that served as models were soon to be replaced by the new airport building types. Newark's Botticino Classico interior wall cladding is the same marble that faces the interior of nearby Grand Central Terminal of New York City, which opened in 1913. For the public interior spaces, Newark's designers chose more traditional surface treatments.

The arrangement of interior space in the Administration Building at Newark Airport was less conventional, and also less resolved. Typically, domestic airport terminal plans of the late 1920s had a large, centralized, self-contained waiting room. The Pan-American Airways Terminal Building of Miami (1928), now demolished, is a representative example. A central atrium, which functioned as the "Waiting Room", was the organizing space around which smaller rooms were grouped. The Miami Terminal Building was almost square in shape. The Miami Terminal Building was designed by Delano and Aldrich, the New York City based architects of many air-terminal buildings, including those at La Guardia Airport. The three top prize-winning schemes of the Lehigh Portland Cement Design Competition of 1929 all had terminal buildings of enlarged central plan types. C. Gifford Rich's second place design was representative, almost square in plan. Long axes, based on traditional Beaux Arts planning principles, linked secondary spaces. The organization of space within Zimmerman and Harrison's grand prize scheme was typical. A passenger would have moved from curbside to airside through a long central axis, walking through two major spaces, crossing the axis of three secondary spaces. Only Will Rice Amon's fourth prize scheme varied among the top four. Amon's plan was linear, with the long axis of the plan turned parallel to the airfield. A short path lead from the front door into a "Concourse" and then immediately to the "Waiting Room", where parked planes would have been seen on the airfield's apron.

The linear plan of the 1935 Airport Administration Building allowed passengers to catch a glimpse of the parked airplanes from the curbside front entry, as they looked through the windows of the opposite wall. From the front at the north, the interior of the building's "Main Concourse" spatially opened-up, extending uninterrupted all the way to the airside apron. Light flooded in from the south. The building became transparent, almost seamless, from automobile to airplane. To further develop the idea of openness, building core elements, such as stairs and toilet rooms, that would have blocked views, were placed along the curbside face of the building, out of the sight-lines. The plan concept of the first floor, which kept the long wall adjacent to the airside relatively free, permitted most planes to be viewed by passengers as they entered the building.

Apparently late developments during the final construction of the Administration Building resulted in the addition of walls, which sub-divided the first floor "Main Concourse". Additional walls were introduced in the wings, to create secondary, public spaces. The walls that sub-divided the "Main Concourse" created two small waiting rooms located on either side of the "Main Concourse". The walls partially obstructed the clear sight lines that were a feature of the original design concept. The resulting rooms were designated to be used by the airlines, to function as their gates. It is possible the parochial interests of the airlines prevented them from sharing the originally designed common space. Each carrier ran its operation independently, from a hangar depot, with its own private waiting room. Relocating into a centralized building, within one large "open space", might have been difficult for the airlines to accept, for up to this time each airline had its own hangar depot. The lease negotiation issue might have also contributed in the decision to modify the original plan.

EUROPEAN DEVELOPMENT AND PLANNING

In Europe, different forces were at work in the aviation industry, including airport planning and design. In France, the national government led developments in the airline industry. As early as 1908, public air shows were held, on open fields with large grandstands built for spectator viewing. The provision for public viewing was a common feature of most post-World War I air-terminal buildings. The roof terraces of the Newark Airport Administration Building owe their origin to this European tradition. After World War I, a commercial operation was established at Le Bourget, a military airfield located outside of Paris. By 1922, the national government planned and built a commercial terminal complex at Le Bourget. The 1922 design was a collection of small, neo-classical pavilions, grouped formally around an open plaza. Each function; telegraph office, administration, ticketing, weather station, etc. was housed in a separate building. In 1927 Charles Lindbergh landed at Le Bourget to successfully complete his historic trans-Atlantic flight, greeted by a tremendous crowd that overwhelmed the airfield.

But, as was faced by other airports worldwide, Le Bourget quickly became too small to handle the increase in air-traffic. In 1937 Le Bourget was replaced with a larger, consolidated terminal building. The new structure was linear in form, with a centrally placed control tower. French architectural designers developed early planning concepts to accommodate expansion. A popular model was the 1929 "wedged-shaped" concept, developed by the engineer A. B. Duval. The center of the prototype receded from the airside, with the flanks projecting forward toward the planes. This allowed for some development at the periphery, without encroaching on the airside. The airfield at Lyon (1931) was developed on this model.

Germany, on the other hand, proceeded at a much more ambitious scale. The terms of the Versailles Treaty required Germany to abandon its military airforce. To counteract this, the government established a national policy to develop a "civilian aviation industry". Heavy subsidies were provided to a few carriers and manufacturers. Lufthansa received subsidies amounting to 65% in 1926. This centralized government control resulted in a more unified design of airport facilities, in part because fewer carriers were competing independently. The 1929 Tempelhof Airport complex of Berlin, now demolished, is noteworthy. It consisted of a centralized linear terminal building, over 300 feet in length, with consolidated functions. The building had extensive roof viewing terraces. Two very long hangar buildings were built, located on either side of the terminal. The three long buildings were arranged on a lateral axis, parallel to the airfield. The formality of Tempelhof Airport's 1929 facility is striking when compared to the informality of the Newark Airport of 1929. As one of the world's busiest civilian airports, private airlines were competing at Newark to develop an industry that investors hoped some day would be profitable. With very few exceptions, little cooperation took place between Newark Airport management and the airlines.

The problems of unanticipated, rapid industry growth quickly became apparent at Tempelhof. In addition, political forces were at work, as the German civilian and military economic sectors became combined by the mid-1930s. In 1936 a second Tempelhof was designed to replace the 1929 terminal complex. The huge, new construction, completed in 1939, dwarfed the original terminal complex. The new waiting room of the terminal complex measured 330 feet by 160 feet. Until the 1950s, the second Tempelhof Terminal was the world's largest airport terminal complex. Interestingly, the statistic of total air-passengers using Tempelhof in 1939 was 247,470 passengers, especially when compared to the much smaller Newark Airport, which handled a total of 355,123 passengers in the same year. Undoubtedly, the new Berlin Airport was planned to serve not only the public, but also function as a major part of the German military/industrial complex.

1935 NEWARK AIRPORT ADMINISTRATION BUILDING PLAN AS A NEW PROTOTYPE

A further comparison of Tempelhof's 1939 plan to Newark is significant. Tempelhof's passenger concourse, adjacent to the airside, was over 3,000 feet long. The linear concourse connected hangars, and its relationship to the airside was concave, similar to A. B. Duval's French "wedged-shaped" planning model. The concourse enveloped the approaching planes. Newark's Administration Building was not only dif-

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ferent in size, slightly longer than 300 feet, but also radically different in its relationship to the airside. At Newark the airside of the long Airport Administration Building was convex in shape, that is, the it's wings were set back diagonally from the airfield.

Few earlier models of the convex plan type are known to pre-date Newark's 1935 Airport Administration Building. The 1930 Terminal Building at Burbank, California is of this general form. The wings of Burbank's building are slightly swept back, away from the airfield. This convex form allowed for the most developed wall surface on the airside. Thus, a building with this shape permitted the maximum number of planes to be parked next to it. 1935 reports indicated that eight planes could park next to the Airport Administration Building of Newark. Historic photos of the early post-war period show sometimes as many as six DC-3s and Constellations surrounding three sides of the structure. This plan type quickly became a standard airport model, including Dublin (1939), La Guardia (1939), Buffalo (1939), Madrid (1954), Newark Terminals A, B, and C (1980s), and O'Hare International (1989), among others. Later terminals would extend satellites from the convex airside of the terminal. But, all had the same goal: to develop as much airside area as possible, maximizing the number of gates for planes to service passengers waiting inside the terminal.

NATIONAL AGENDA

The Great Depression eventually resulted in a different federal philosophy in relating to American society. The hand's-off approach espoused by the Hoover Administration changed with the presidency of Franklin Roosevelt, starting in 1933. New Deal programs had an impact on nearly every aspect of life, including building design and construction. CWA funding made a significant contribution to the construction of the enlarged 1935 Newark Airport, including the Airport Administration Building. Almost two-thirds of total costs were federally subsidized. An important part of the New Deal was the WPA program, which commissioned federally sponsored art. WPA art was very popular during the 1930s. During this time period, there was a long waiting list of buildings desiring WPA contributions. Newark Airport, went to the top of the WPA list, primary for two important reasons: first, it was a major new, public facility, designed to be used by hundreds of thousands of people; the artwork therefore would have a large audience. The second reason was of equal significance. The general public was awed by the novelty of the science of flight, a technology that at the time was only 33 years old. As an airport with the latest technology, New Deal artwork would be identified with Newark. The progress represented by the aviation industry, as exemplified by the 1935 Newark Airport and its Administration Building, paralleled the progressive social and economic agendas of the New Deal.

NEWARK AIRPORT ADMINISTRATION BUILDING ARCHITECTURAL SIGNIFICANCE

The 1935 Newark Airport Administration Building is one of the few surviving examples of the advanced version of the second-generation airport building type. Second-generation terminal buildings replaced the earlier hangar depots of the late 1920s. During the early development of this new building type, train stations were used as planning models, utilizing axial, central planning concepts. The 1935 Newark Airport Administration Building went beyond the train terminal model, advancing airport building design. With its linear shape and side wings stepped-back, it was an initial attempt to reestablish a new relationship between passenger and plane. In the original hangar depots, passengers and planes were brought together in the same structure. In later airport terminal-building designs of the late 1920s, they were separated.

The convex, linear plan of the 1935 Airport Administration Building initiated design advancements that attempted to minimize the distance and physical barriers between passenger and plane, characteristic of the earlier second-generation airport terminal buildings. The Newark plan maximized the visual connection of a human being to the open airfield. In addition, it provided more direct physical and visual access to the plane-boarding gate.

With its broad, wide-sweeping exposure to the airside, a passenger waiting in the Main Concourse could take in the entire Newark airfield. With the removal of the 1920s hangar depots during World War II, it was only in 1946 that this innovative design concept was finally realized. A passenger waiting inside the Newark Airport Administration Building during the late 1940s could see airplanes parked nearby clustered around the building. Looking beyond, between planes, could be seen the large hangar buildings. Stretching further off in the distance, almost at the horizon, the ends of runways. For a short time period, starting in 1946 and ending by 1953, the 1935 Newark Airport Administration Building stood in the center of one of the world's busiest and most important airports.

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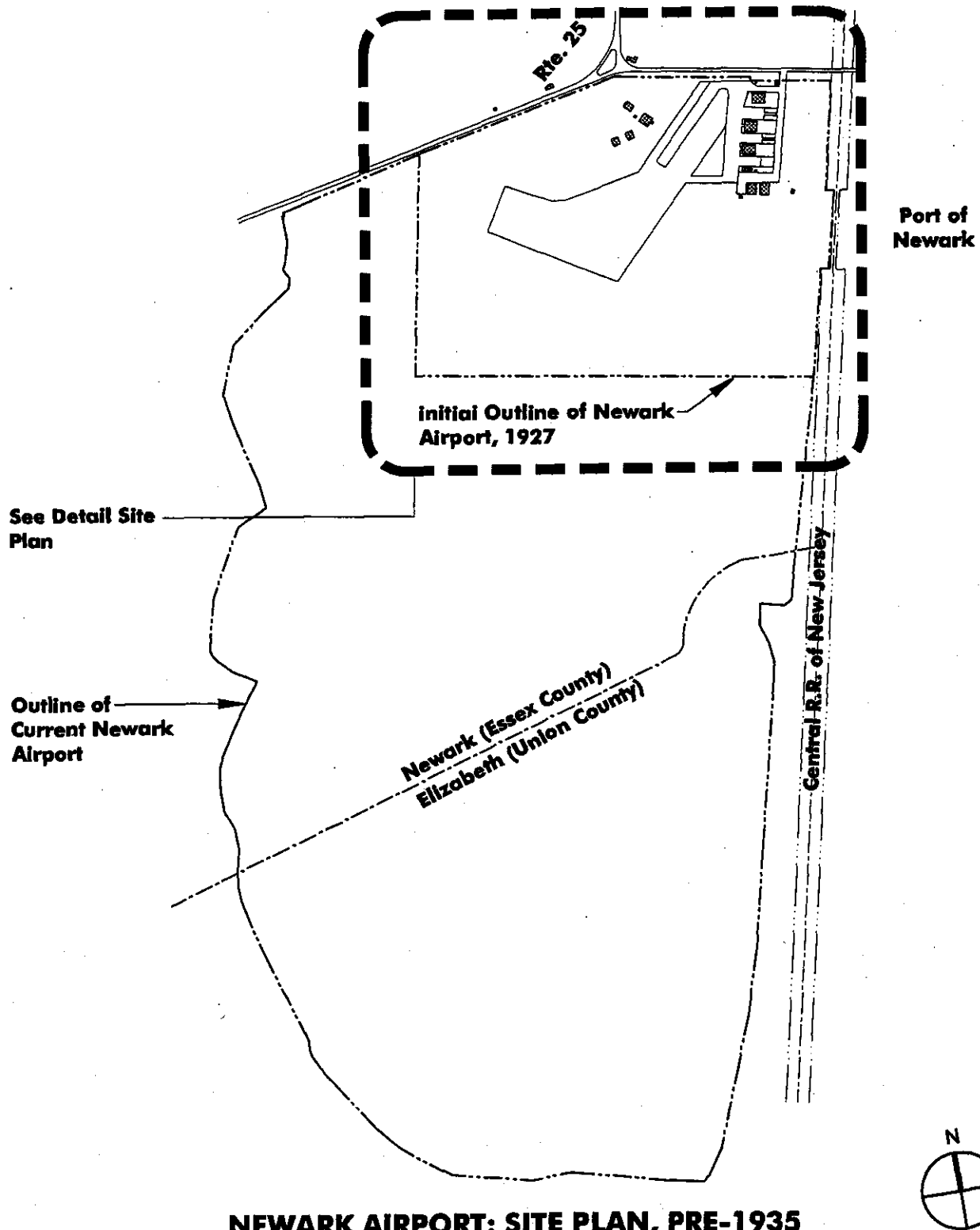
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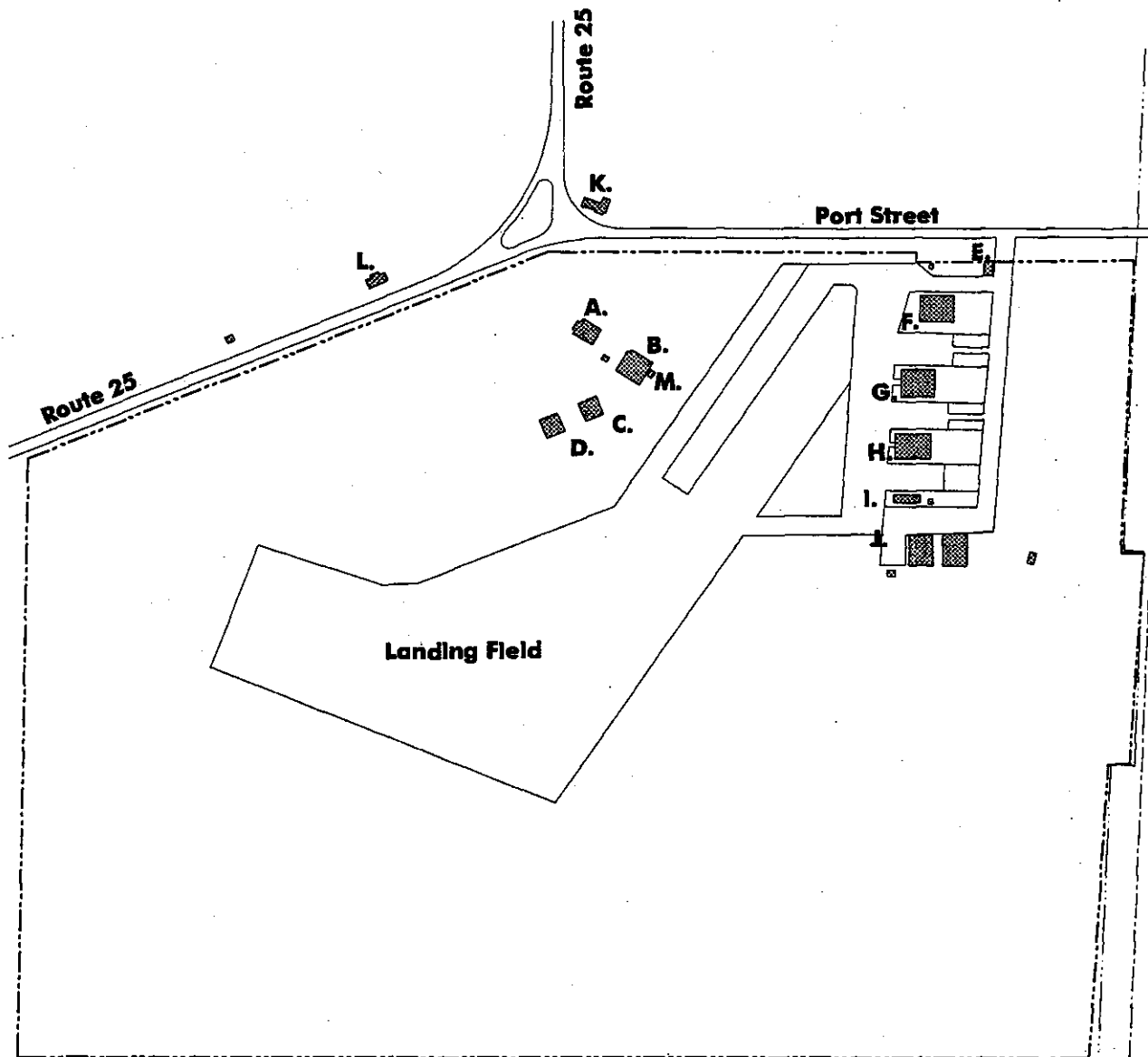
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NEWARK AIRPORT: SITE PLAN, PRE-1935
Source: Beyer Blinder Belle Architects & Planners (September 2000)

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| A. Standard Oil Hangar (c.1929) | I. New Jersey National Guard-
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| B. City Hangar (1928) | J. New Jersey National Guard Hangars
(1929-1931) |
| C. Newark Air Service Hangar (c.1929) | K. Police House (c. 1930) |
| D. Eastern Aeronautical Hangar (c. 1929) | L. Restaurant (1931) |
| E. First Airport Administration Building
Including Post Office & Weather
Service (c. 1930) | M. Control Tower (c. 1929) |
| F. American Airlines Hangar Depot (c. 1929) | |
| G. United Airlines Hangar Depot (c. 1930) | |
| H. Eastern Airlines Hangar Depot (c. 1930) | |

NEWARK AIRPORT: DETAIL SITE PLAN, PRE-1935
 Source: Beyer Blinder Belle Architects & Planners (September 2000)

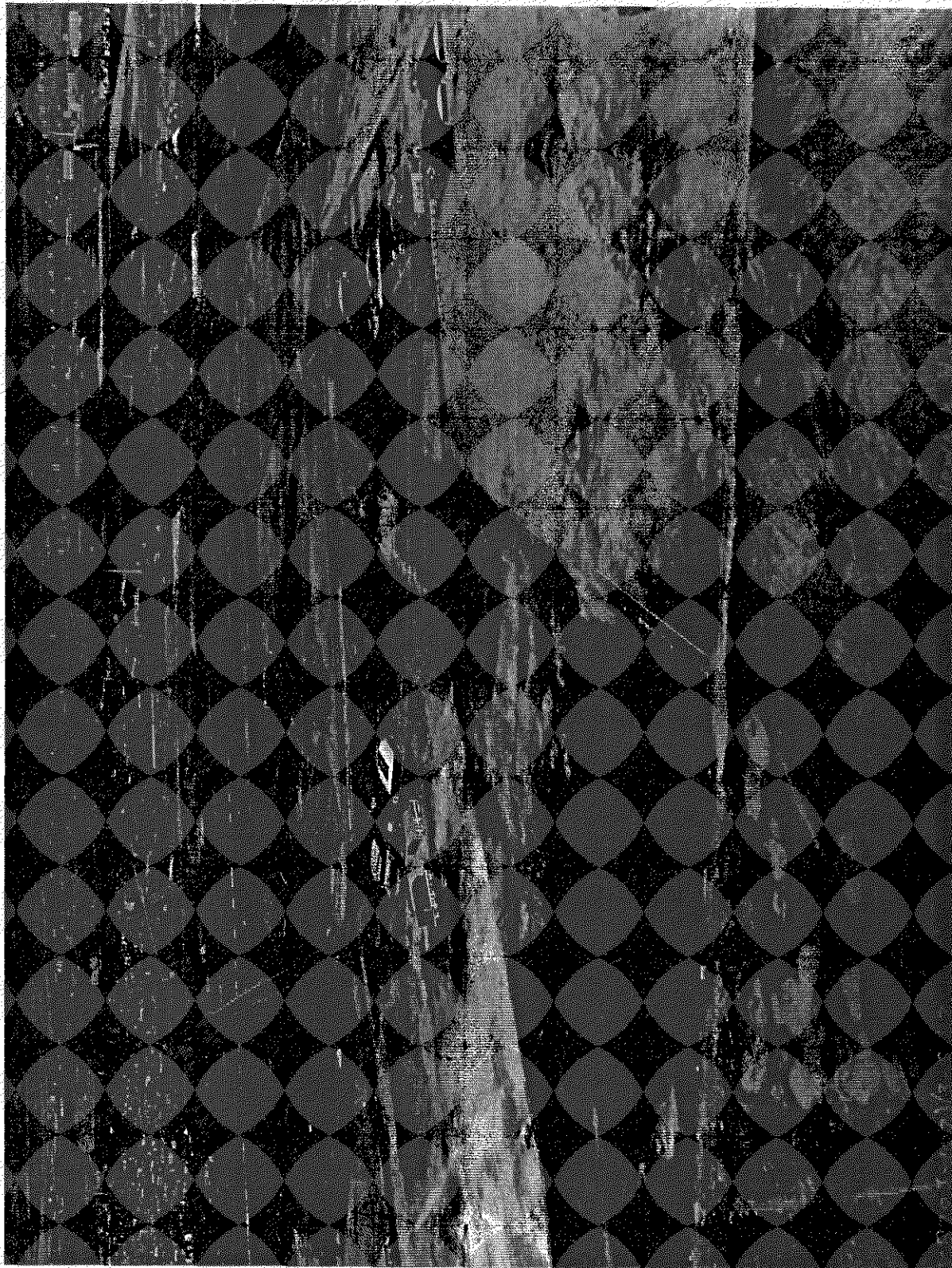


NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
(Page 24)



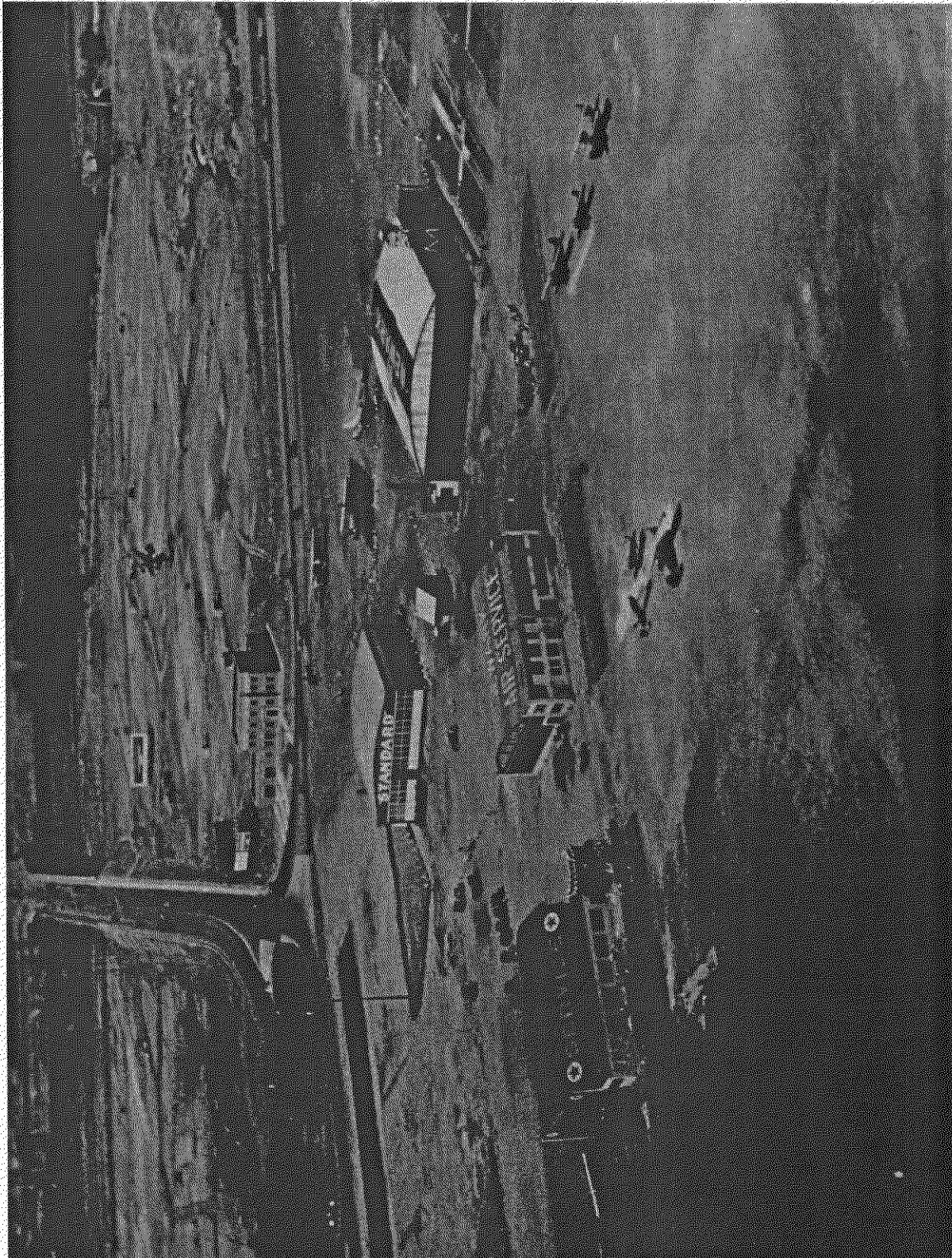
Aerial View of Newark Airport (1931)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
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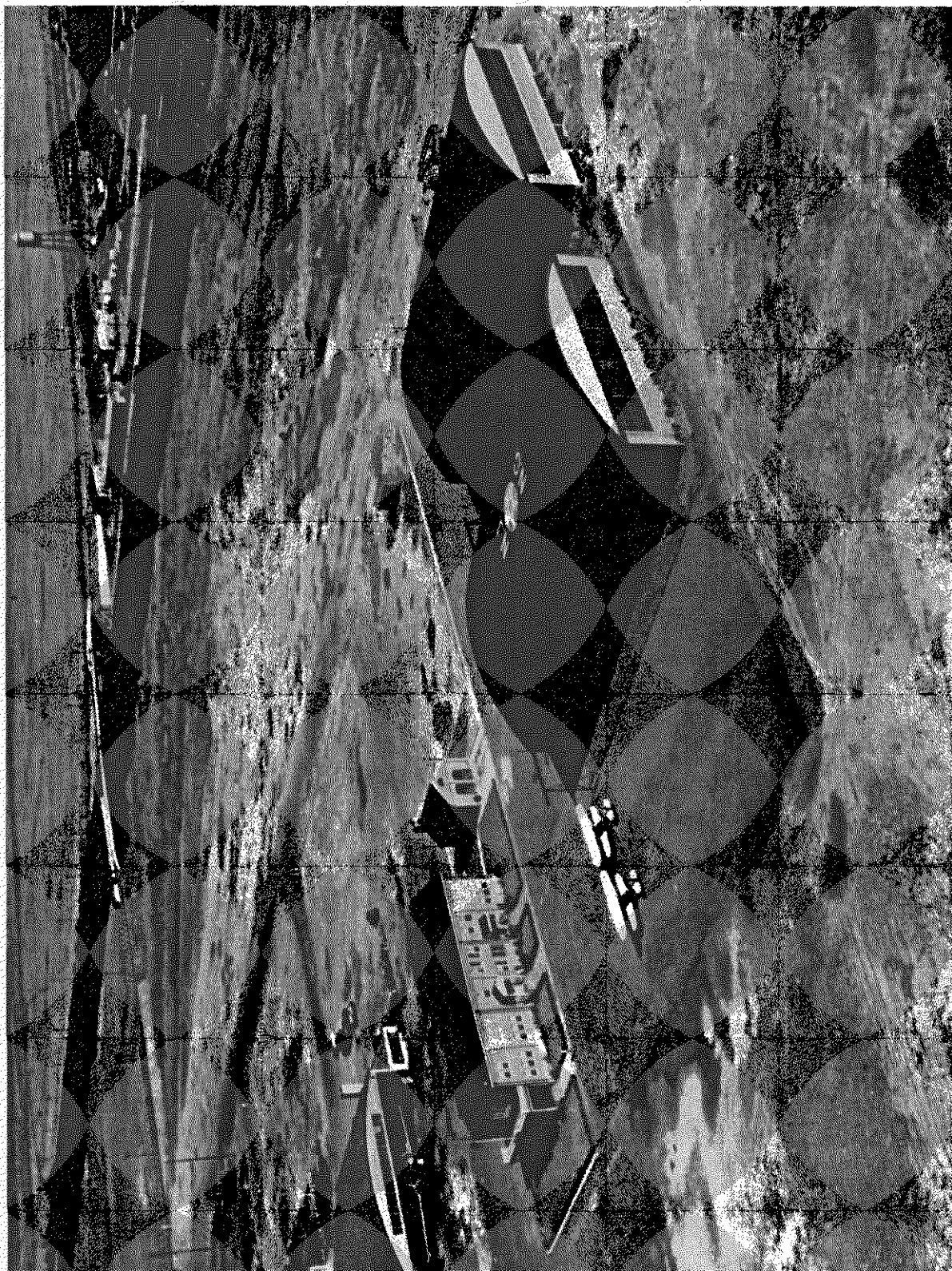
Aerial View Looking North (1932)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
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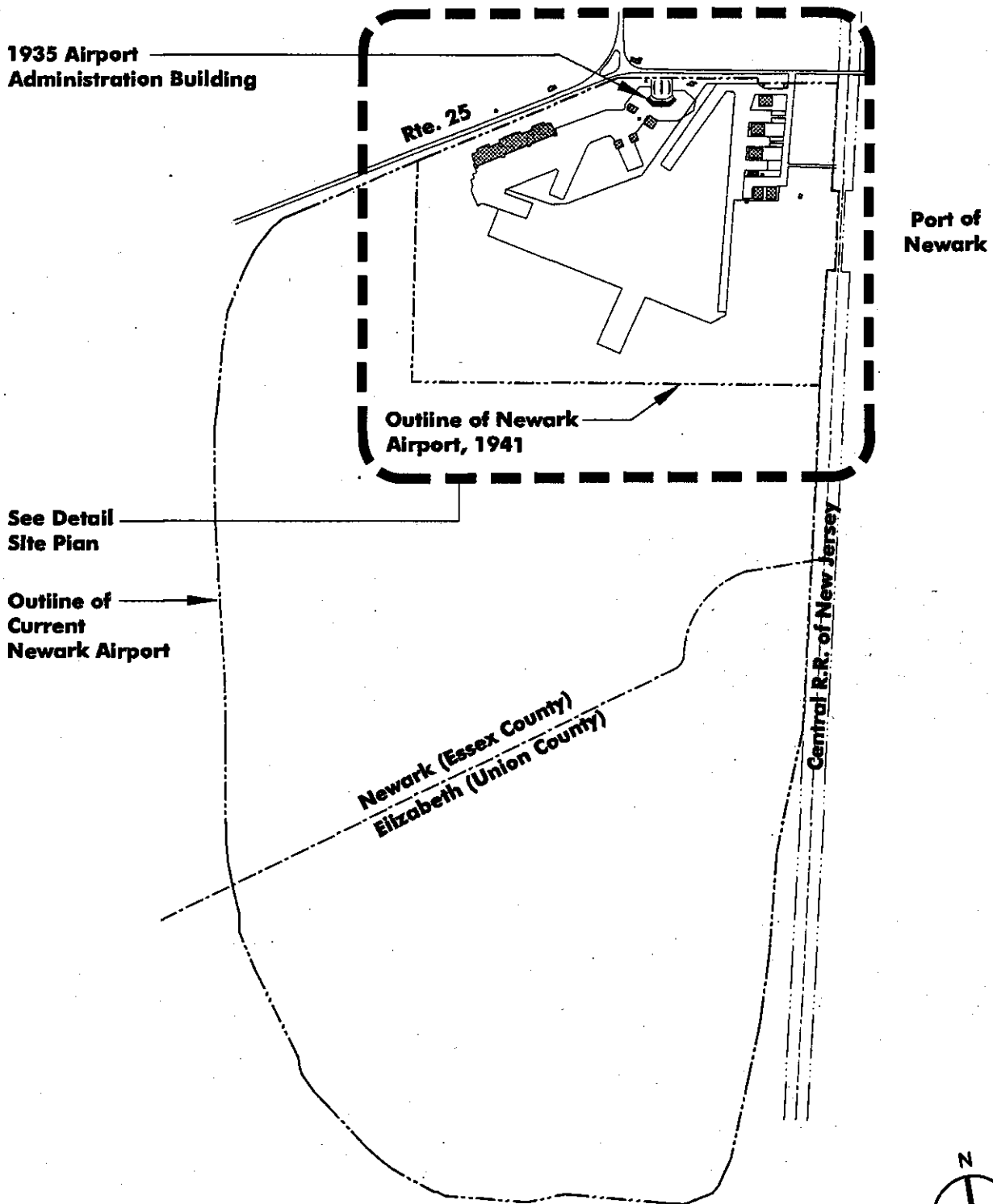
Aerial View of City Hangar Complex (c. 1933)
Source - Aviation Hall of Fame and Museum of New Jersey Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
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(Page 27)



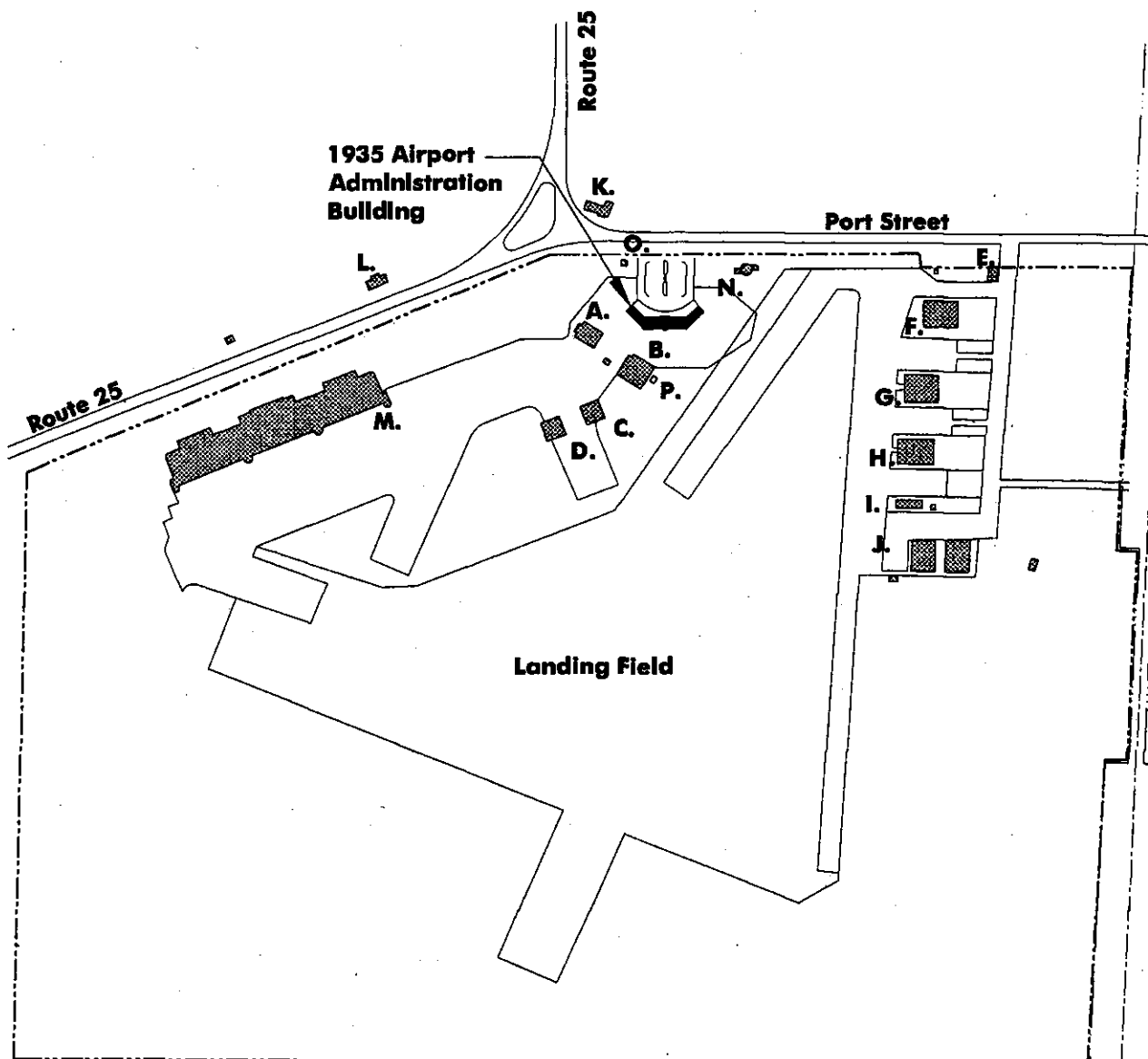
New Jersey National Guard (1932)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
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NEWARK AIRPORT: SITE PLAN, 1935-1941
Source: Beyer Blinder Belle Architects & Planners (September 2000)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
 (Newark International Airport, Building 51)
 HAER NO. NJ-133-B
 (Page 29)



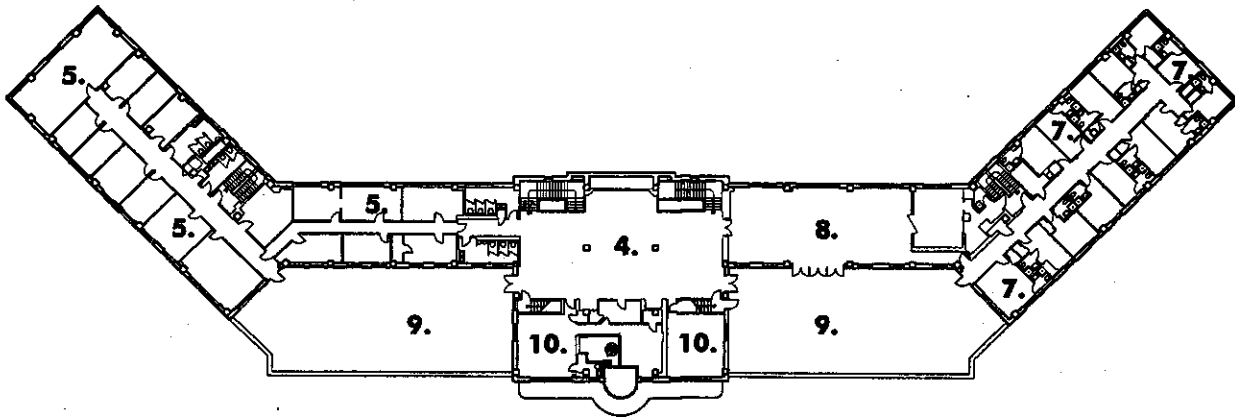
- A. Standard Oil Hangar
- B. City Hanger (Demolished 1940)
- C. Newark Air Service Hangar
- D. Eastern Aeronautical Hangar
- E. Post Office (1930 Administration Building)
- F. American Airlines Hangar Depot
- G. United Airlines Hangar Depot
- H. Eastern Airlines Hangar Depot

- I. New Jersey National Guard-Administration Building
- J. New Jersey National Guard Hangars
- K. Police House
- L. Restaurant
- M. Brewster Hangar (1938)
- N. TWA Passenger Terminal (c.1938)
- O. Electric Substation (c.1935)
- P. 1929 Control Tower (Demolished c.1935)



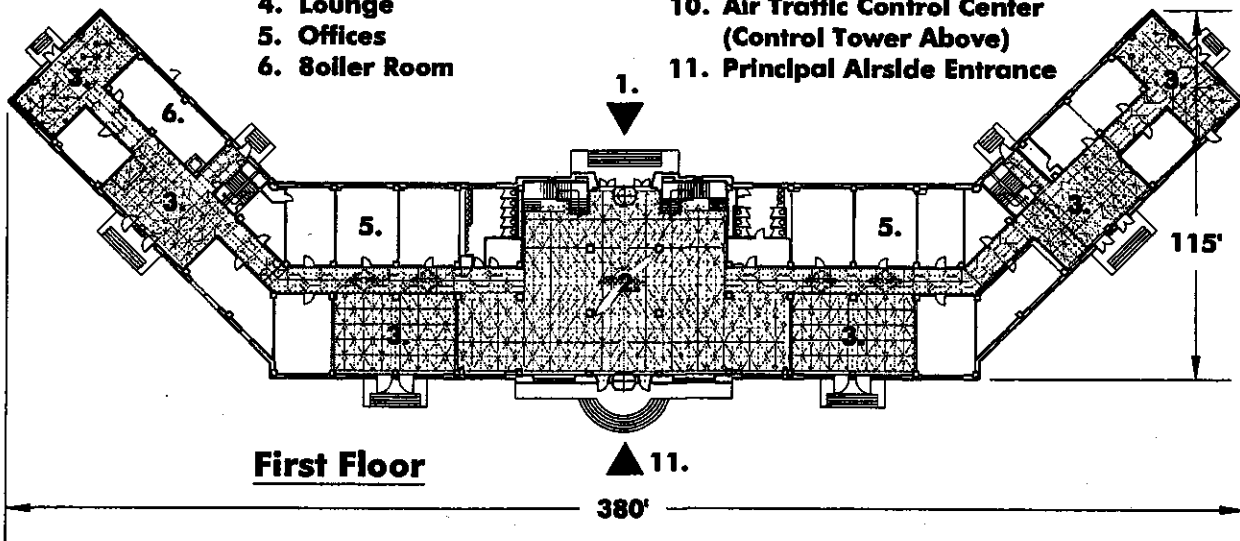
NEWARK AIRPORT: DETAIL SITE PLAN, 1935-1941
 Source: Beyer Blinder Belle Architects & Planners (September 2000)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
 (Newark International Airport, Building 51)
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Second Floor

- | | |
|---------------------------|---|
| 1. Main Landside Entrance | 7. Hotel Rooms |
| 2. Main Concourse | 8. Restaurant |
| 3. Passenger Waiting Room | 9. Roof Terrace |
| 4. Lounge | 10. Air Traffic Control Center
(Control Tower Above) |
| 5. Offices | 11. Principal Airside Entrance |
| 6. Boiler Room | |



First Floor



1935 ARCHITECTURAL FLOOR PLANS
 Source: Beyer Blinder Belle Architects & Planners (September 2000)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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Aerial View of Newark Airport (pre-1941)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
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Aerial View Looking East (c.1936)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
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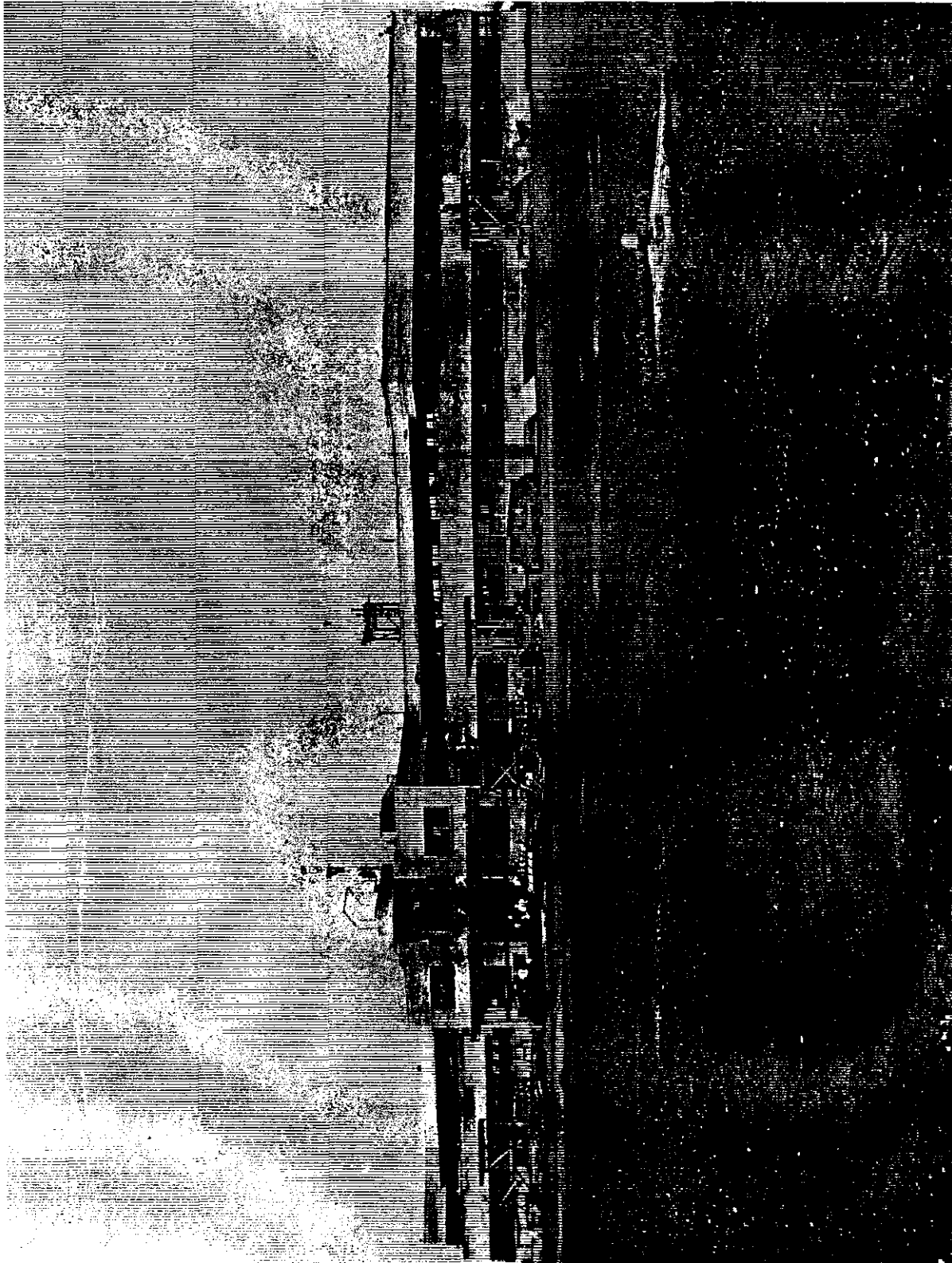
Aerial View with Downtown Newark in Background (1937)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
(Page 34)



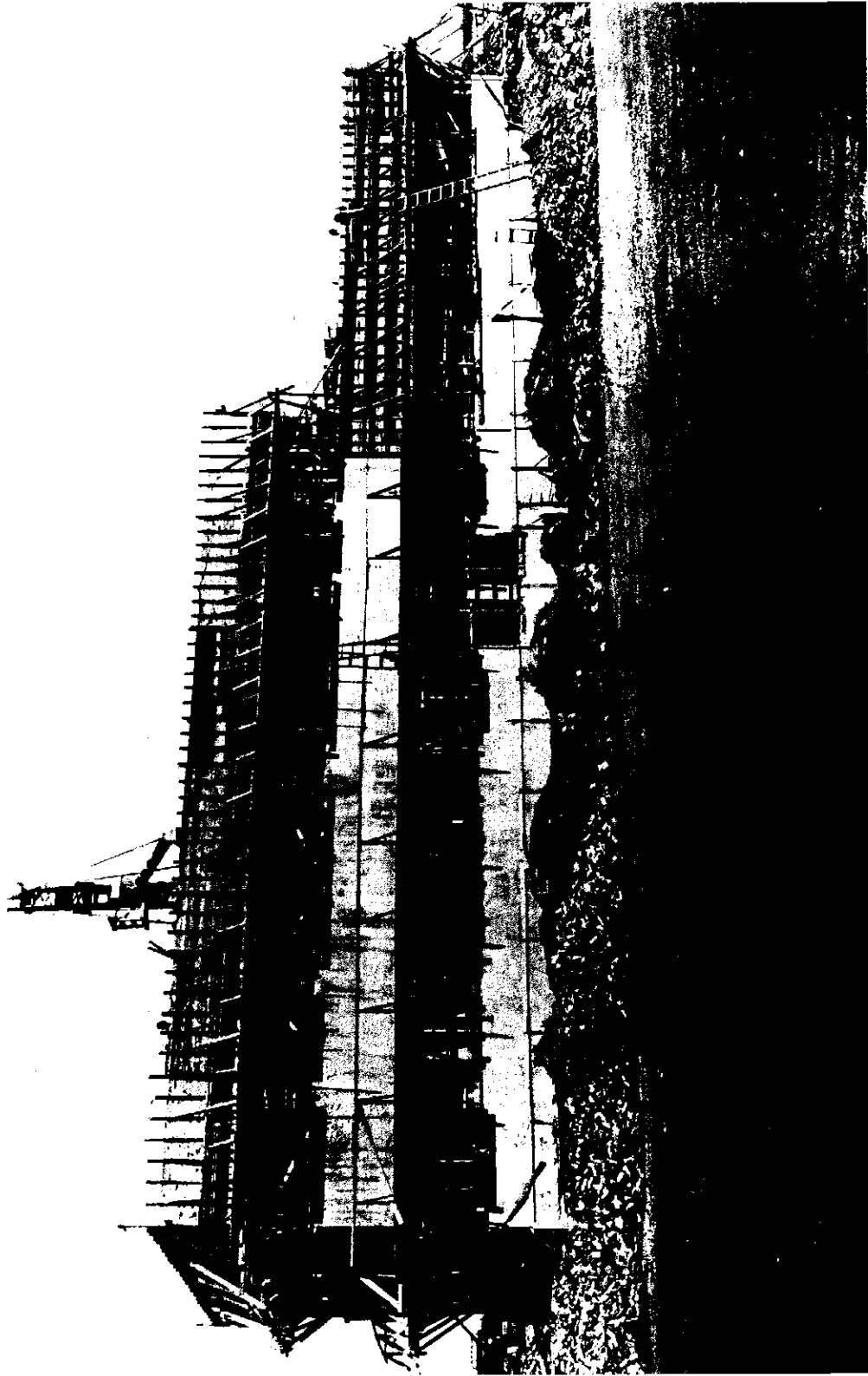
Airport Administration Building Construction Aerial View (1934)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
(Page 35)



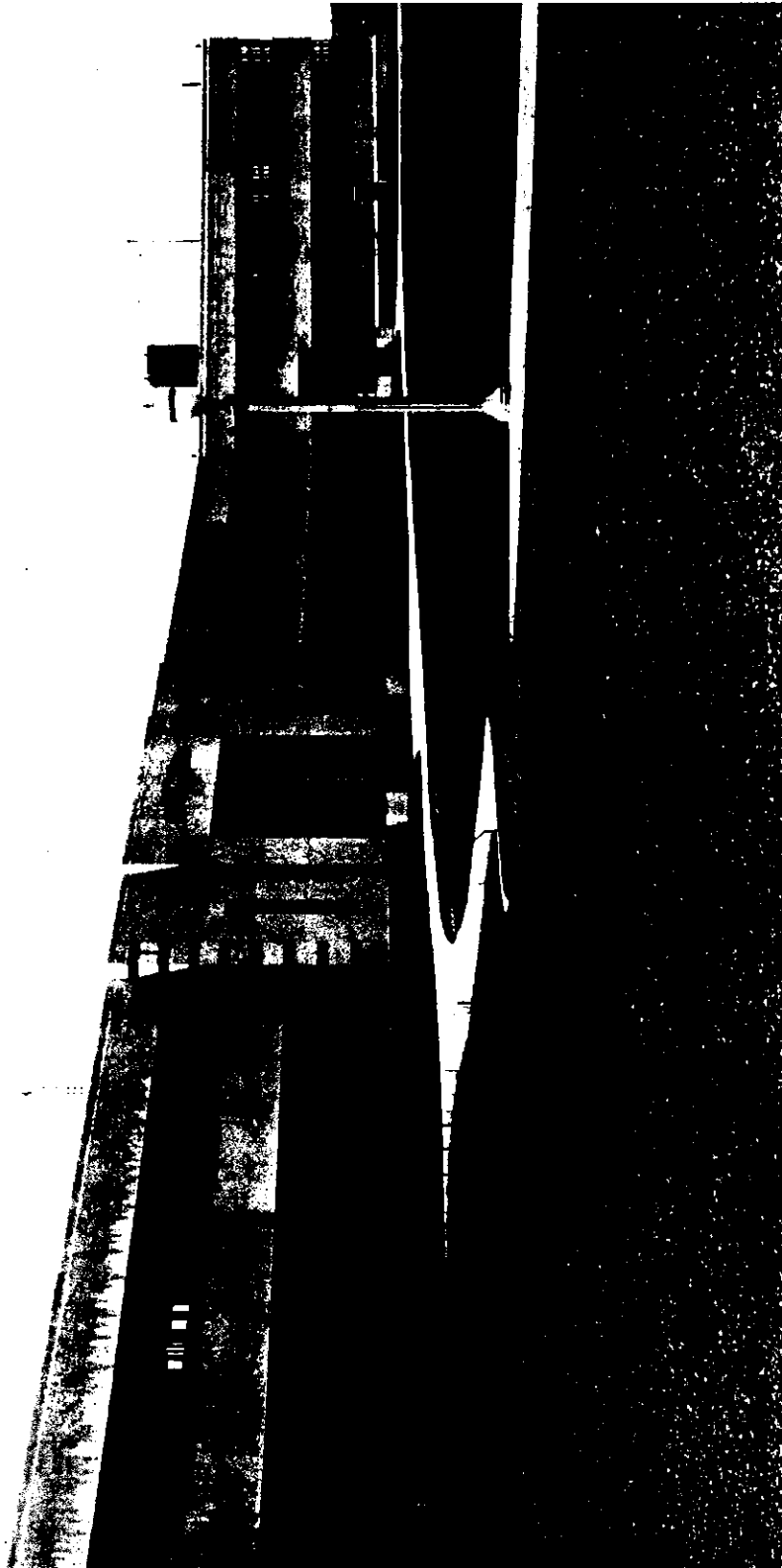
Airport Administration Building Construction View (1934)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
HAER NO. NJ-133-B
(Page 36)



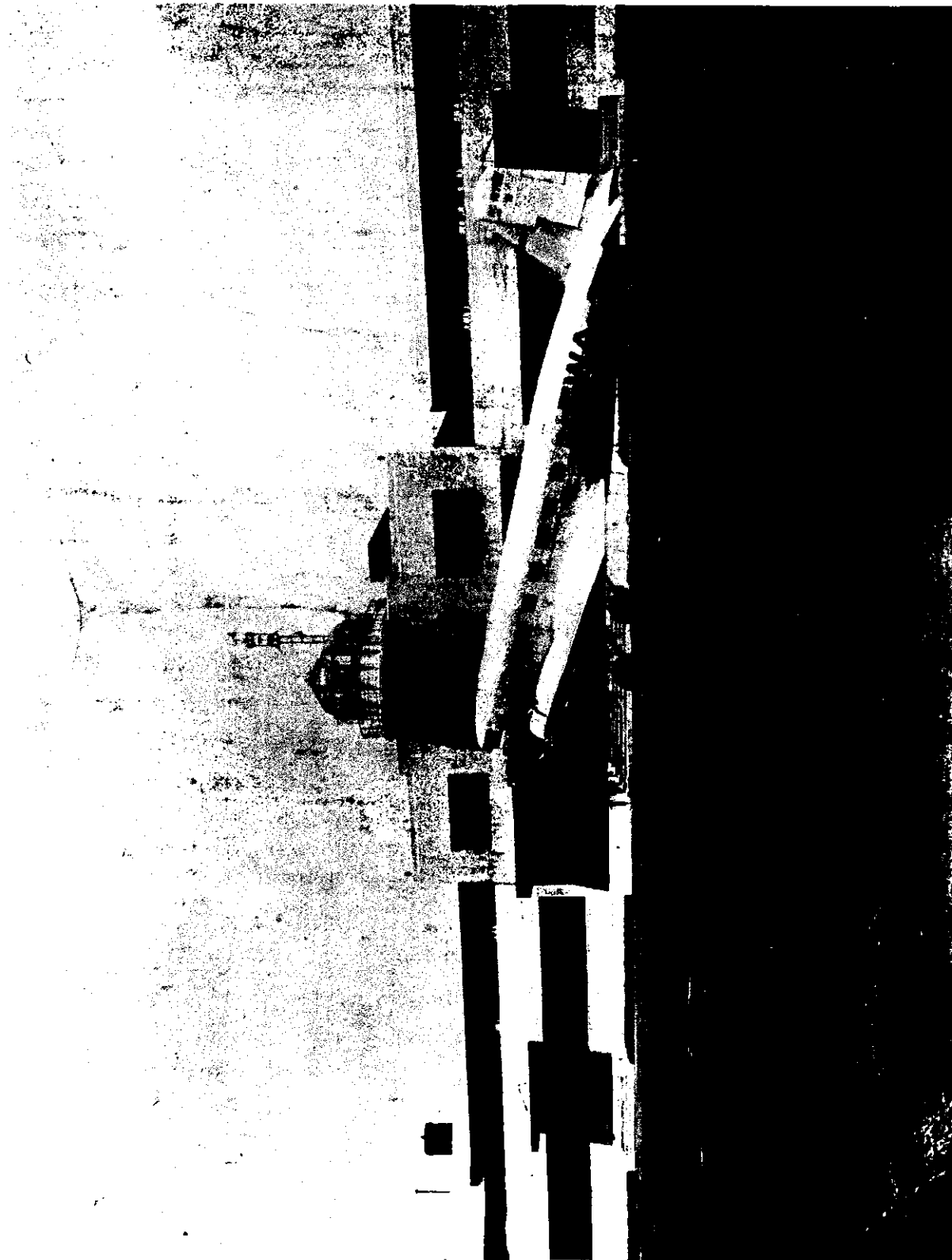
Airport Administration Building Construction View (1934)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
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Airport Administration Building North Elevation (1935)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
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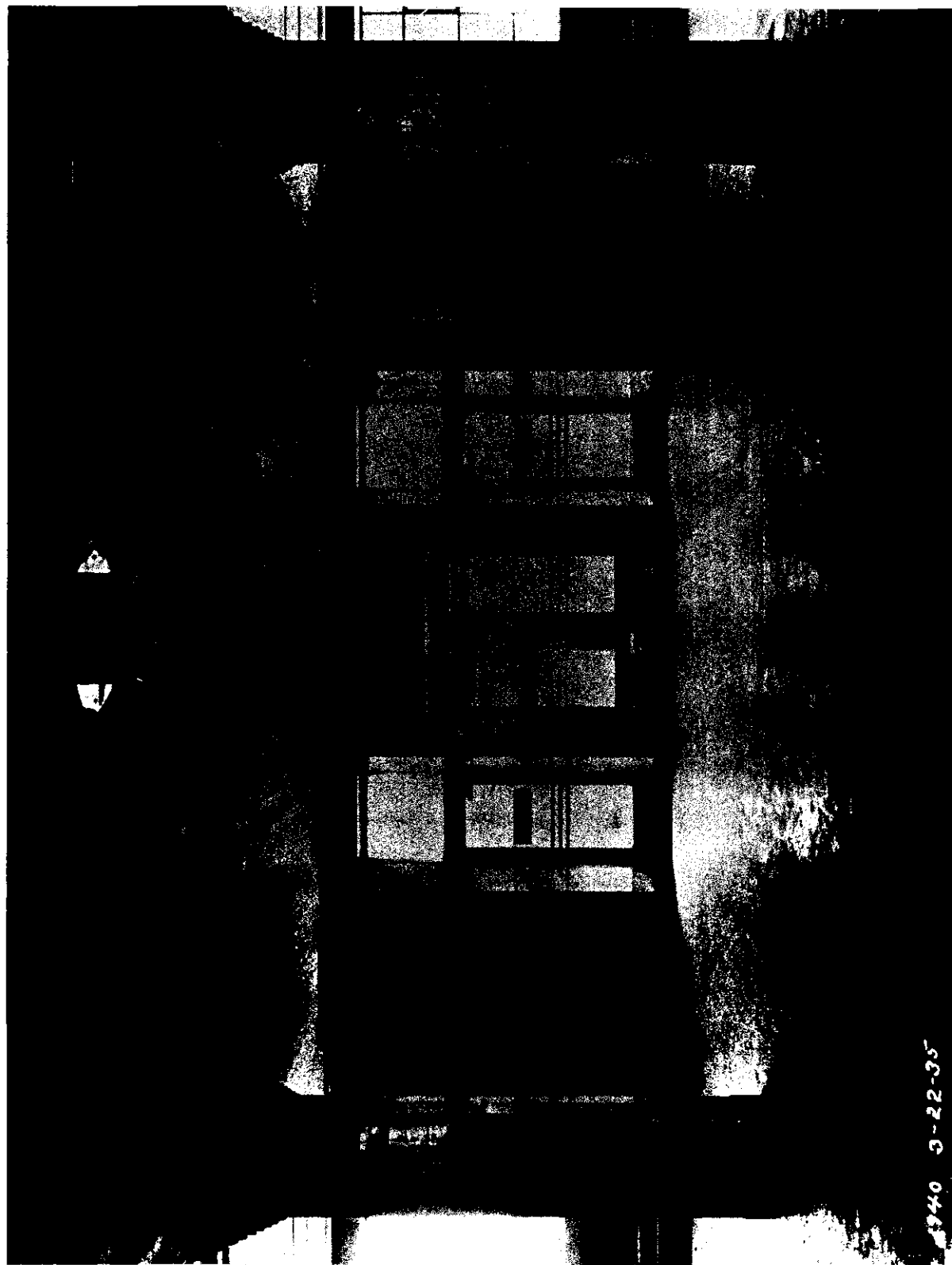
Airport Administration Building South Elevation (c. 1935)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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View of Airport Administration Building from City Hangar (c.1935)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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1940 3-22-35

Airport Administration Building Main Concourse (1935)
Source - Newark Library Photo (copy-right free)



Airport Administration Building Lounge with Gorky Murals (1940)
Source - WPA Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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2758 3-28-35
View of Depot Hangars (1935)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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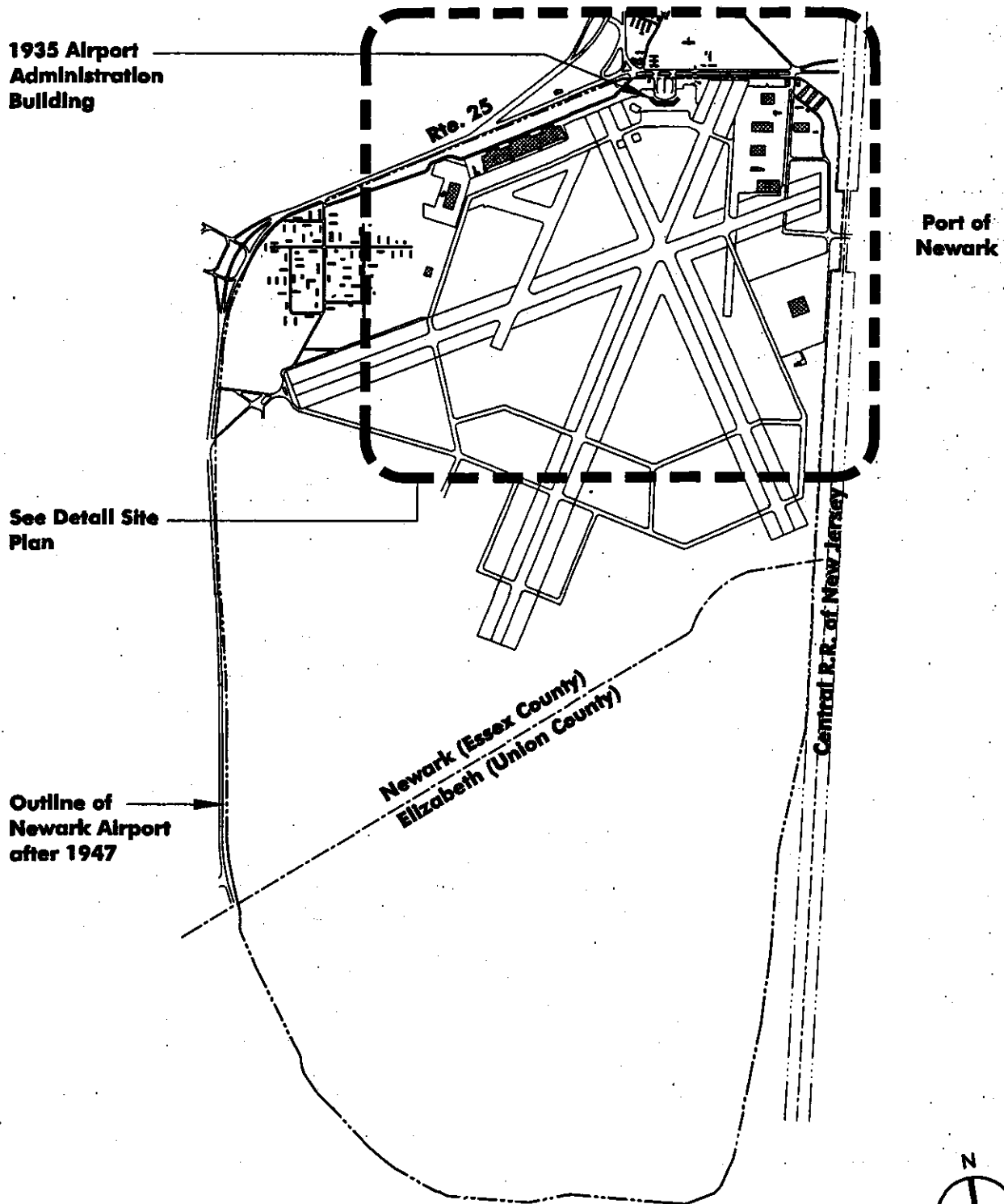
2744 3-22-35

View of Police House and Electric Substation (1935)
Source - Newark Library Photo Collection (copy-right free)



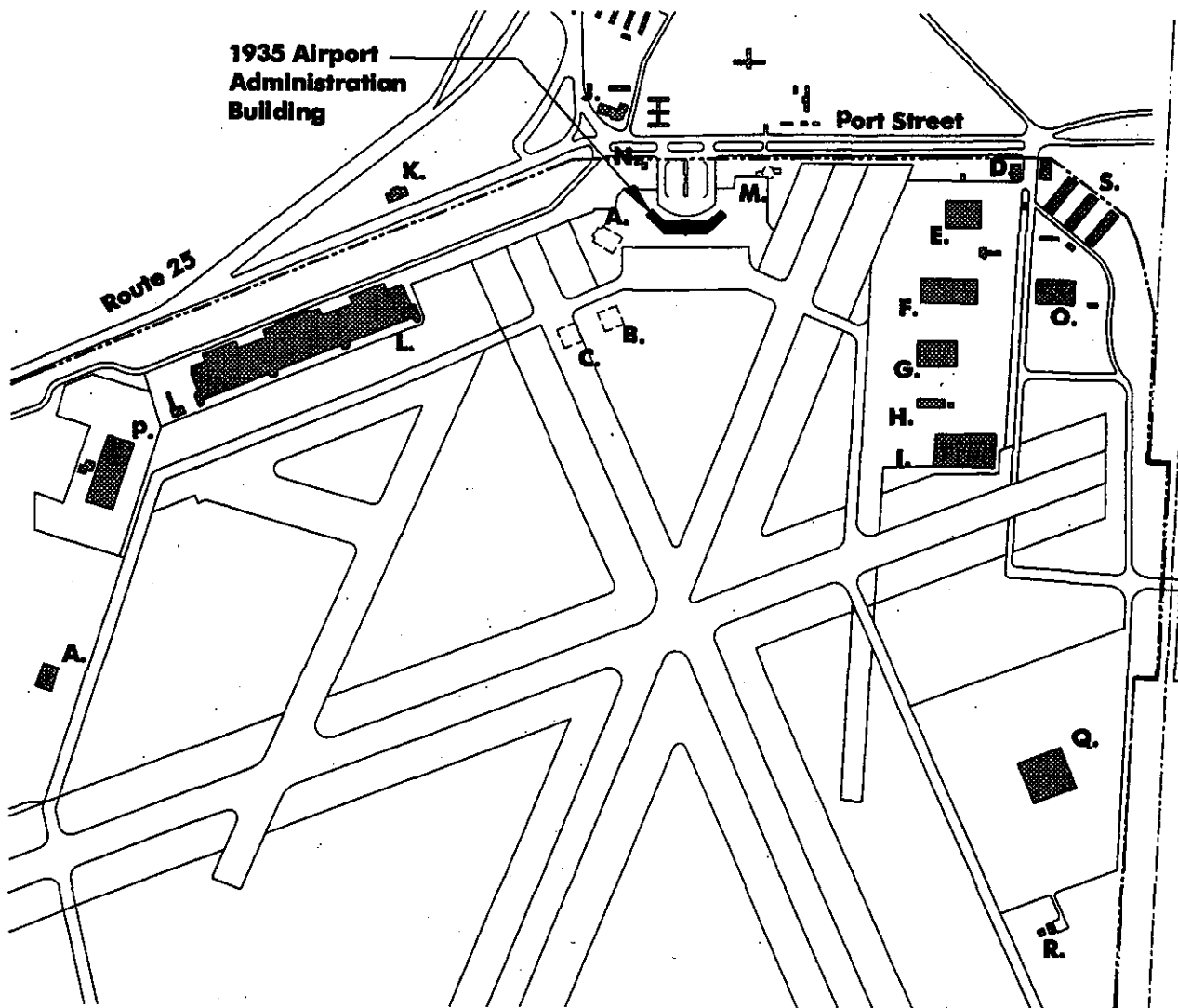
View Looking East of TWA Passenger Terminal (1937)
Source - Newark Library Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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NEWARK AIRPORT: SITE PLAN, 1942-1952
Source: Beyer Blinder Belle Architects & Planners (September 2000)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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- | | |
|--|---|
| A. Standard Oil Hangar (Relocated in 1942) | J. Employment Office |
| B. Newark Air Service Hangar (See note 1) | K. Restaurant |
| C. Eastern Aeronautical Hangar (See note 1) | L. Brewster Hangar |
| D. Post Office | M. TWA Passenger Terminal (Demolished by 1942) |
| E. American Airlines Hangar Depot | N. Electric Substation |
| F. United Airlines Hangar Depot | O. Building 11 (See note 1) |
| G. Eastern Airlines Hangar Depot | P. Butler Hangar- Building 12 (1943) |
| H. New Jersey National Guard- Administration Building | Q. Cargo Building- Building 50 (1943) |
| I. New Jersey National Guard Hangars | R. Army Control Tower (1942) |
| | S. Warehouses (c. 1943) |

Note 1: Hangars relocated in 1942 and combined to form Building 11.

NEWARK AIRPORT: DETAIL SITE PLAN, 1942-1952
 Source: Beyer Blinder Belle Architects & Planners (September 2000)



NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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Aerial View of Newark Airport(c.1949)
Source - David Morris Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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Aerial View of Airport Administration Building (c.1944)
Source - Aviation Hall of Fame and Museum of New Jersey Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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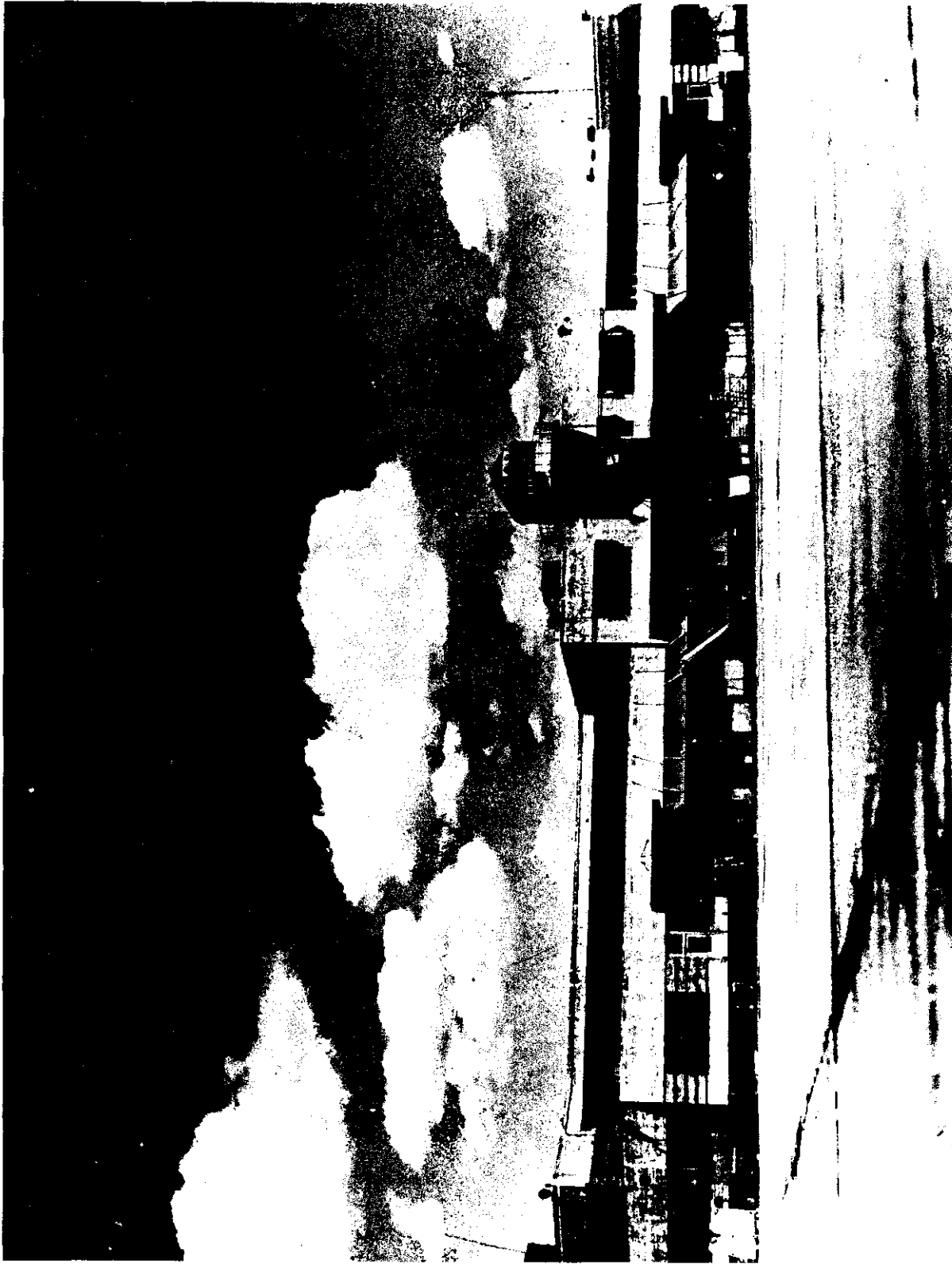
Aerial View of Airport Administration Building (c.1949)
Source - Aviation Hall of Fame and Museum of New Jersey Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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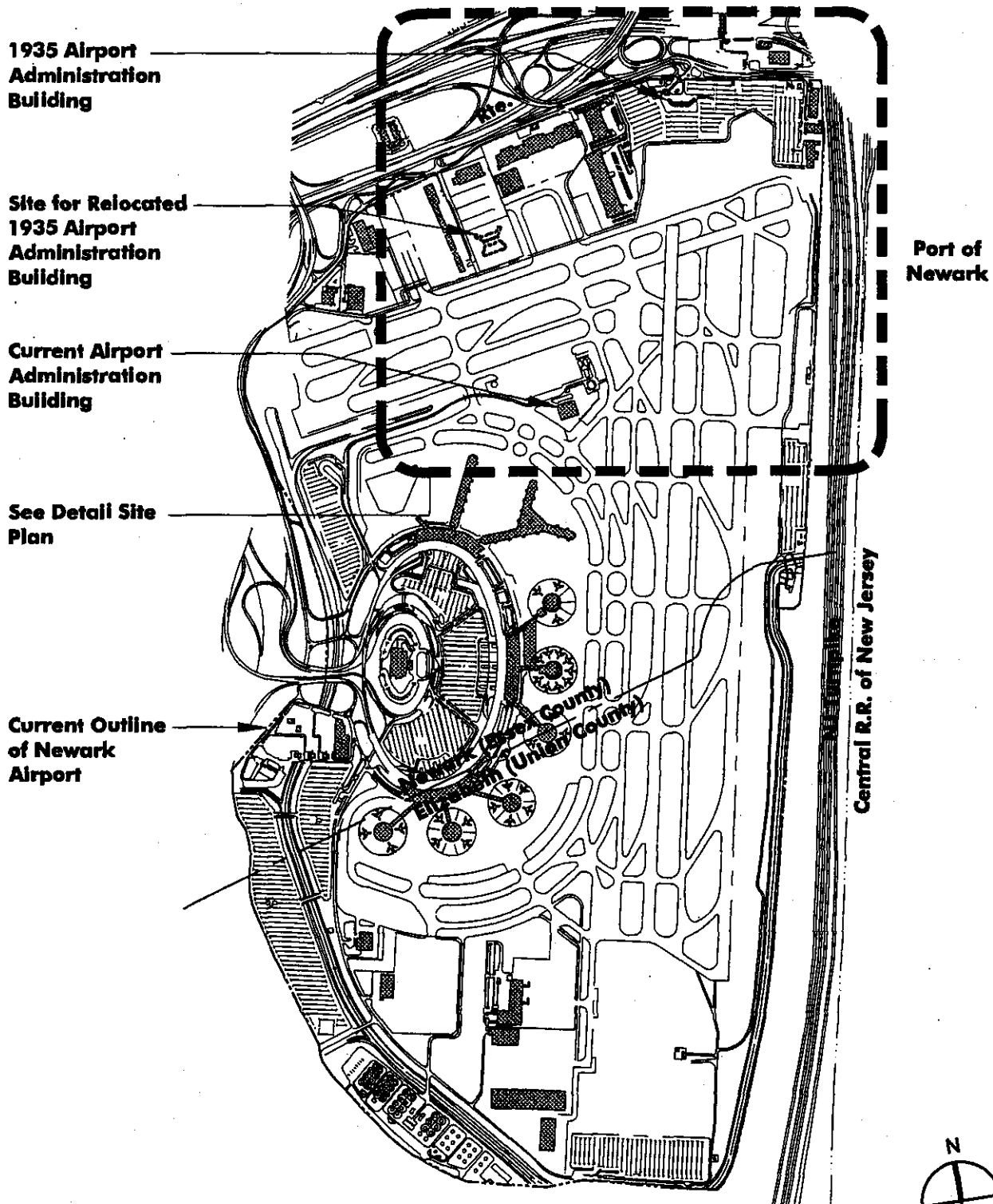
Aerial view of Airport Administration Building (c. 1949)
Source - Aviation Hall of Fame and Museum of New Jersey Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
(Newark International Airport, Building 51)
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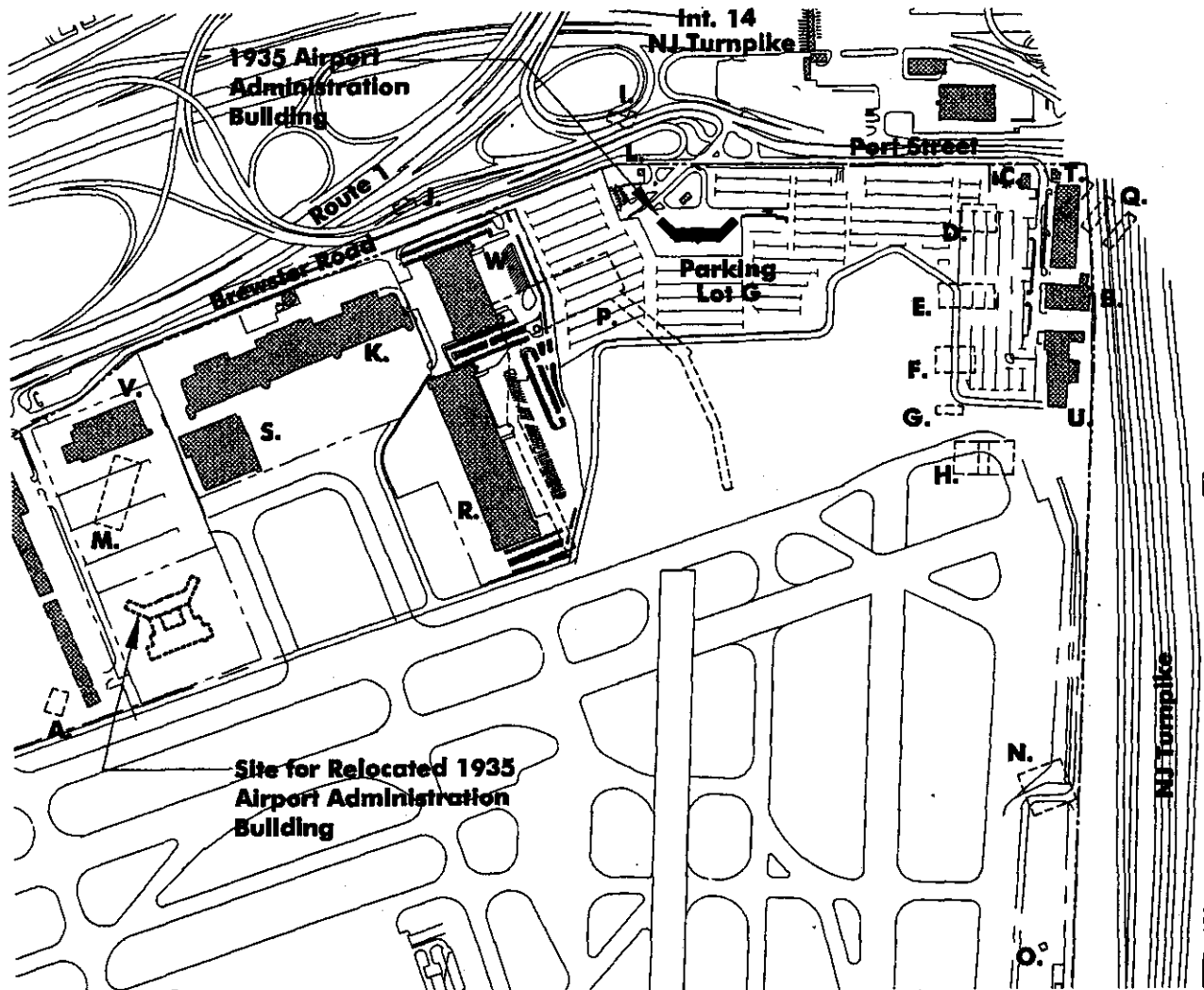
Airport Administration Building South Elevation (1946)
Source - Aviation Hall of Fame and Museum of New Jersey Photo Collection (copy-right free)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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NEWARK AIRPORT: SITE PLAN, 1953-2000
Source: Beyer Blinder Belle Architects & Planners (September 2000)

NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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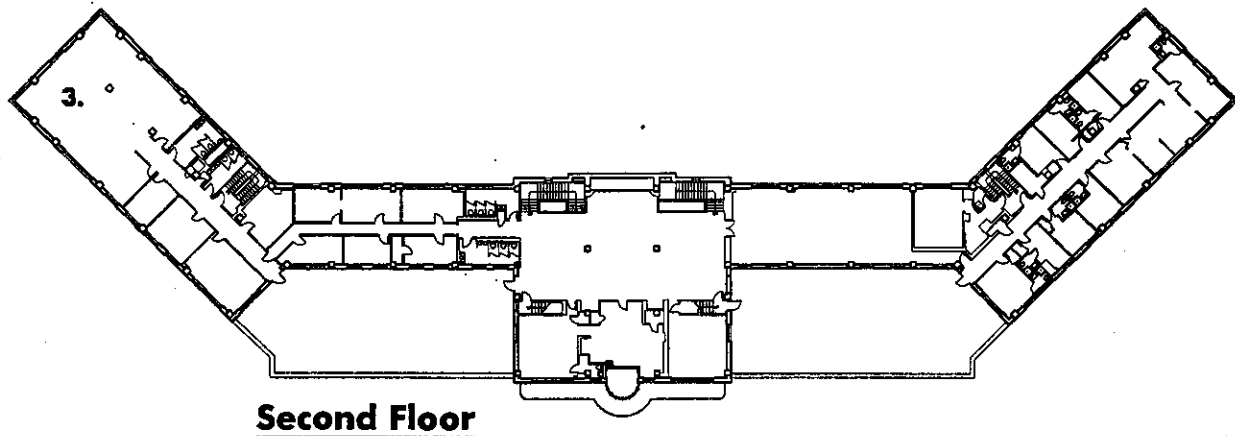


- | | |
|---|--|
| A. Relocated Standard Oil Hangar (Demolished 1957) | L. Electric Substation |
| B. Building 11 | M. Butler Hangar- Building 12 (Demo. c.1968) |
| C. Medical Building (Former Post Office) | N. Cargo Building- Building 50 (Demo c.1960) |
| D. American Airlines Hangar Depot (Demolished c.1960) | O. Army Control Tower (Relocated off-site 1960) |
| E. United Airlines Hangar Depot (Demo. c.1960) | P. North Passenger Terminal (Built 1953- Demolished 1997) |
| F. Eastern Airlines Hangar Depot (Demo. c.1960) | Q. Warehouses (Demolished c. 1968) |
| G. NJ National Guard Administration Building (Demolished c.1960) | R. Cargo Building- Building 340 |
| H. NJ National Guard Hangars (Demo. c.1960) | S. Continental Hangar- Building 56 |
| I. Employment Office (Demolished c.1968) | T. PA Maintenance- Building 80 |
| J. Restaurant (Demolished c.1960) | U. PA Storage- Building 81 |
| K. Brewster Hangar | V. Building 15 |
| | W. Building 339 |

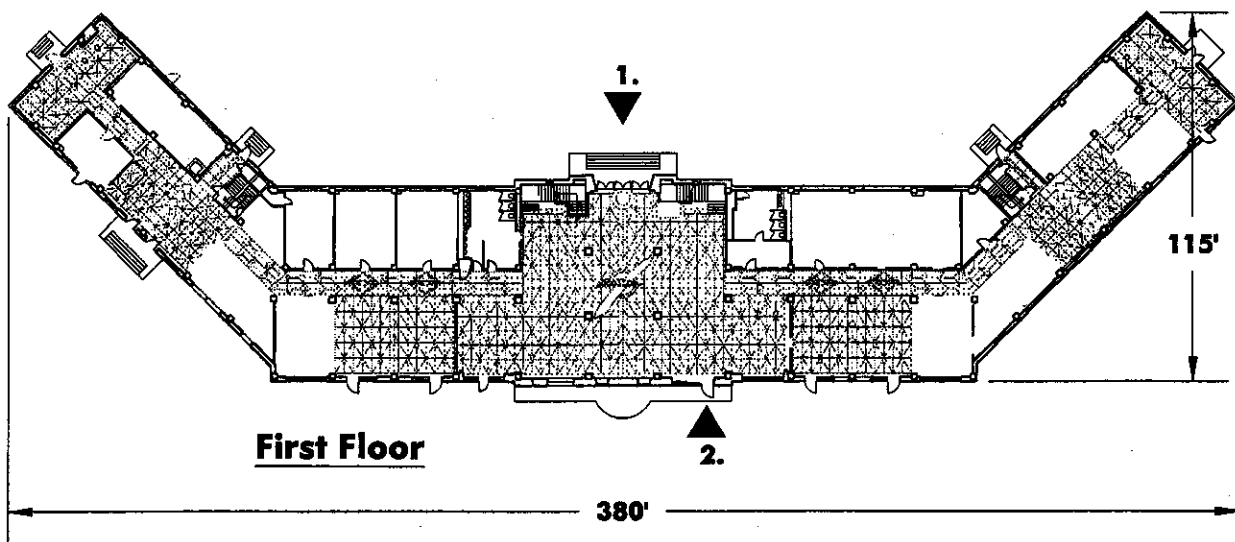
NEWARK AIRPORT: DETAIL SITE PLAN, 1953-2000
 Source: Beyer Blinder Belle Architects & Planners (September 2000)



NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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1. North (Principal) Entrance
2. South Entrance
3. US Weather Bureau



EXISTING ARCHITECTURAL FLOOR PLANS (AUGUST 2000)
Source: Beyer Blinder Belle Architects & Planners (September 2000)



NEWARK INTERNATIONAL AIRPORT, ADMINISTRATION BUILDING
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Aerial View of Newark Airport (1957)
Source - David Morris Photo Collection (copy-right free)